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THE SCIENCE OF
FLY FISHING FOR TROUT

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SLENDER ON THE BEAVERKILL

The song of the reel and the bending of her rod show that the trout is boring downward and up-stream to its stronghold beneath the log. Slender with a big trout. (See page 198.)

THE SCIENCE OF FLY FISHING FOR TROUT

BY

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"THE COMPLETE SCIENCE OF FLY FISHING AND SPINNING"

WITH ILLUSTRATIONS

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PREFACE

THE INCOMPARABLE MERITS OF DRY FLY FISHING FOR TROUT

It is generally conceded by the all-round sportsman that no kill is quite equal to that of the first clean run salmon landed by himself on his own fly-rod, and while it is readily admitted that the salmon river will inspire the mind with the strength and force of its beauty, and will invigorate the body with the health-giving fragrance of its pine forests or heathers, it is equally true that the very pink of nature's charms must be given to our Trout Stream. The exquisite shades of their leafy surroundings, smiling at us from their mirrored surfaces, the entrancing series of greens, olives, and browns peeping at us from the transparent depths of these haunts of the trout, the musical cadence of their rippling tones, the scent and the color of their flowers, and the song of their birds, will most surely efface the cares and the strains of modern life, and will lull the senses into most delicious content; and the joy, of being amidst such Sylvan charms, will but add an additional delight to the absorbingly interesting sport of Dry Fly Fishing, making it, to the philosopher, the poet, the artist, and the sportsman, the most perfect form of all out-door enjoyments.

As each step is taken, in the all but too short a day, as each new turn in his Trout Stream is reached, new problems will be presented to the fisherman, each with its own subtle interest, but one and all offering him chances

depending on his skill and nerve, and on the delicate and accurate introduction of his chosen fly to the notice of the fish, of whose position he feels certain, either from his own intimate stream knowledge, or, from observing the longed-for dimpling rise of the Trout.

But the fisherman, however much he may enjoy the beauties of his Trout Stream, will desire to enjoy the pleasure of this, the most fascinating of all pastimes, and will very naturally desire to produce—later on—some solid evidence of his skill as a fly fisherman.

When one remembers the extended realms of sport and the assistance which has been obtained from the literature devoted to fly fishing—to say nothing of the pleasant reminiscences which such literature has awakened—it would be ungrateful to deny the usefulness, the efficacy or the charm of the books which have been written on this delightful sport. This book is not written with the view of teaching the experienced fisherman how he should catch Trout, but it is written more especially for those who are thinking of taking up this pastime, and if the Author should be successful in imparting to any of his readers the skill which has afforded him so many happy hours, and if in addition some of his methods or his experiences may happen to interest or profit his brother fisherman, he will repay, in some measure, the debt which he owes to a kindly Providence for having given him so many delightful opportunities of fishing.

If it be desirable to obtain help, in order to become proficient in fly-casting, the author admits and advocates the great advantages of personal tuition, but, if such tuition be unobtainable, he is confident that, by explain-

ing the Science of casting a fly in this book, in terms similar to those which he has been accustomed to use when teaching his clients the art of casting a fly, he will assist his readers to acquire a success in casting which will well repay them for their most careful attention.

The average fisherman does not want to know how to build a rod, but he certainly wishes to know how to select one and how to use it. He may not want to make his own flies, but he certainly desires to know what flies are necessary, and when and how to offer them to the trout. He does not wish to plait or render water-proof the delicate silk strands of his fishing-line but he wants to be able to extend it accurately and delicately and to preserve its usefulness.

The Overhead Cast with the trout rod, the one on which ninety-nine out of every hundred fly fishermen rely, is selected by the author for the purpose of illustrating the most perfect method of casting a trout fly.

The Overhead Cast, on which every known method of throwing a fly is based, is for this reason the best one to employ, for teaching clearly and concisely, those thoughts and actions which will give the student the greatest accuracy and delicacy when casting his wet or dry fly. When this is acquired as a habit, it will enable the fisherman to master all the other and most interesting variations of fly-casting. Each separate cast with the trout rod is described in this book and each one should be treated by the student as being a variation of the Overhead Cast.

In writing this book the author has endeavored to confine his text to subjects of interest to the sportsman, and,

maybe, of profit to those who, owing to the lack of opportunity, are perhaps inexperienced or unskilful as fly fishermen. Should the reader then wish to use his delicate rod and tackle to its greatest advantage, it is to the natural phenomena of the water side and to the science and the skill which are necessary when casting a fly or playing a fish, that the author wishes to direct his particular consideration in this work.

He wishes to thank his beloved wife and fishing companion for her help and sympathy in this task, and in conclusion would ask his brother angler to deal gently with the book, for which he desired to claim but one merit, namely, that it is written in all sincerity to assist those who may desire to follow a sport which is beloved by so many, and in which the dear old Master, Izaak Walton, led the way.

FOREWORD

THE spirit echoing through the following epitaph, written by Mr. W. Gilchrist Wilson, will most certainly touch a sympathetic chord in the minds of his brother fishermen.

TO AN UNKNOWN ANGLER

"Following the course of a mountain stream we came to a rude grave, a few slates put loosely together. Its history is not known but some say it is that of a fisherman—of the early part of the last century" (1700).

"Sleep, unknown comrade, sleep
Securely in thy cool
Slate bed, where mountain steep
Purples the long, slow pool.

Barely a cast away
Aura rolls softly by,
Only a trout at play
Breaks Nature's sympathy.

Yet still we hear thy reel
Go ringing down the stream—
An unknown presence feel,
And know we do not dream.

For we are anglers all
And ply our gentle trade
By ripple, rush, and fall—
Pagan and not afraid.

Then let us not repine,
But wait our turn, and so
Reel in our little line,
Shoulder our creel and go."

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THE SCIENCE OF
FLY FISHING FOR TROUT

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CHAPTER I

THE FEARS AND THE JOYS OF A FLY FISHERMAN

The Fears and Joys of a Fly Fisherman—Skill in Fly Fishing versus Skill in Golf—The Possible versus the Probable in Fly Fishing—The Pleasure of Our Successes—Learning to Cast—Value of Perfection—The Charm of the Unforeseen—Wet and Dry Fly Fishing—Advantages of the Dry and the Wet Fly Methods Compared—Patience, Experience and Observation Necessary—The Success of the Different Methods of Fly Fishing Compared.

ALTHOUGH the trout is possibly the most alert of all fish it is not advisable to allow the fear of scaring it to spoil the pleasure of fly fishing.

To cast your fly accurately and delicately—to keep well out of the ken of the fish—to use a fly whose size and colour are similar to those on the water—to see that your leader is sufficiently light to fall, after it has been extended, without attracting the notice of the fish, in other words, to use rods and tackle which are just sufficiently strong to land the fish you are likely to rise, and to fish for the trout in the nearer waters before trying to fish for them in the more distant ones, are the precautions which should be taken when fly fishing, and which are sufficient in themselves to insure far more than the average success.

SKILL IN FLY FISHING VERSUS SKILL IN GOLF

The art of casting a dry fly accurately and delicately is, however, just as important and equally, if not more, essential, than the skill which has to be used when striking a golf ball—for however rottenly a golf ball may be

foozled, and however bad may be the language or absurd the antics of a golfer, bad work or misfortunes at golf are not likely to scare the "hole" on the desired green into precipitous retreat. Just as great an art and science is required in the various methods of projecting a dry fly, whether on an open or on a difficult stream, as is required when striking in an absolutely faultless manner any sort of ball, in any sort of "lie," to the desired green. But here the comparison ends, for the golf ball, having been either smitten properly or disastrously foozled, progresses until it ceases to roll, and will then lie dead, and will, until it is once more addressed by the player, afford no further thrill and presents no further difficulties until this next stroke is made. But just think of the variety of interests, hopes, and possibilities which follow *each* accurate cast made with the fly rod—consider the fly as it floats down-stream, after it has made its absolutely accurate passage to its scientifically chosen goal. It has, because it has been properly cast, fallen light as a gossamer, and is now floating, looking with its delicate wings "like some fairy yacht upon some fairy sea," directly to the spot at which the rise of your trout has been seen, or to the position which you know or assume is directly above a fish.

Consider the absorbing anticipation preceding the expected rise of the fish, the thrill of the rise, accompanied, as it should be, by the delicate act of striking, the answering rush of the fish, and the tense moments supplied by the life and death struggle of the trout. Can we omit to mention or forget the anxious moments attending the approach of the fish to each natural hazard

of the stream, and the final and supreme satisfaction as the fish, submitting at last to our suasion, is drawn toward the well-trained presentation of the net? Do not all of these thrills add their joys to the pleasure made by the accurate, delicate, and successful cast of your fly, which had been accompanied by a skill and experience as great as that which has to be employed by a scratch golf player when making his most successful drive or approaching shot?

THE POSSIBLE VERSUS THE PROBABLE IN FLY FISHING

In fly fishing—as in all other mundane matters—it is the “possible” which should be carefully considered and which will bring that reward which is the happy lot of the successful fisherman.

It is well to remember that the wiser the man the more will he anticipate the “possible,” and also that most of us, at one time or the other, are apt to be misled by the “probable.” So it is, that, when casting a dry fly—except when your objective is decided by the fish rising—you will have to trust to your own experience when anticipating every possible position in which your unseen quarry may be lying. It is this problem which makes dry fly fishing so interesting, for every possible position in which a fish may be lying has to be taken into consideration when fishing up-stream, in preference to the more cursory consideration which is too often given by the wet fly fisherman, to the *probable* position of a fish, and therefore the fisherman—like the sportsman who inspects the saddled horses before each race, and selects and bets on the one which he thinks will win—has the

pleasure at least of selection and of backing his opinion in the casts he makes, and his pleasure, therefore, is vastly increased every time his judgment lands him with a winner.

No fish is more alert or more wary than the trout, and certainly there is no pursuit more engrossing nor any sport more fascinating than the dry fly method of trout fishing.

THE PLEASURE OF OUR SUCCESSES

The most acceptable of our successes are those which can be directly traced, or even attributed, to our own mental or physical efforts, and for that reason the ability to cast a dry fly accurately and delicately is a pleasure which in itself is a sufficient reward at the end of a day's fishing, though that day may be almost barren as regards the number of fish in your creel.

The satisfaction which accompanies the perfectly understood and successful use of a fly rod is undoubtedly increased by the pleasure which is felt by the fisherman who, after an all-too-short a day spent by some lovely trout stream, can on his return home produce a dish of speckled beauties as a tribute to his knowledge and the successful use of his treasured rod and delicate tackle.

There are but few accomplishments more delightful to witness than the handling of his rod, line, and fly by the skilled dry fly fisherman. It is not alone the grace and ease which accompany the varying and always beautiful curves assumed by his rod and line which compel the admiration of the onlooker, but it is equally due to

the instinctive recognition of the science or art which lies behind the exquisite result of each cast. But if the casting of a skilled fisherman be so admirable, can there, on the other hand, be any failures more humiliating than those which accompany the efforts of the unskilled fly fisherman to cast a fly?

This book is written with the serious object of assisting those who may be anxious to learn the science of fly fishing for trout; and for his comfort I can assure the reader, if he be a beginner, that it is by no means a difficult or a lengthy process to acquire such an absolute and exact method of casting a fly that he may be able with certainty to present his lure accurately and delicately to the trout in ninety-nine out of every hundred of the chances which occur in an average day's fishing.

LEARNING TO CAST

I am fully persuaded that the one thing a novice can and should do before he goes down to "scare the trout" is to learn the art of casting a fly.

Not only should the novice endeavour to obtain instruction, but it might well repay the experienced fisherman to find out whether he can improve his style and acquire absolute accuracy in his casting, and even if the expert be well satisfied in these respects, to ascertain whether there may not be other styles of casting which might help him to get his fly to any desired spot under circumstances and against difficulties which have hitherto appeared to him to be insurmountable.

Since publishing my first work on "Fly Fishing and Fly Casting," some twenty years ago, I have established

schools for trout and salmon fly casting in London, and since 1922 in New York, and I have had the pleasure of coaching in these schools, also in Canada, Australia, and Africa, in Europe and elsewhere, over six thousand clients.

These experiences, supplemented by a most exhaustive study of the whole science of casting, have shown me that I can teach my clients, no matter their age or sex, an accurate and perfect style of casting a fly, with or against the wind, in both the wet and dry fly methods, with both the right and the left hands, in three or four lessons, each of one hour's duration. Further, this experience has proved that if the country be fairly clear between the rod and the position of the trout, a fisherman should under almost any circumstances be able to cast his fly to a fish, so long as it be within a reasonable distance.

VALUE OF PERFECTION

The beginner should consider the saving in time and material which he will effect by first acquiring the ability to cast a fly, also the satisfaction he will feel in knowing that when he arrives at the water-side he will not appear as a novice to his brother angler.

When a student is able to cast his fly lightly and accurately in any required direction, he can then seek his trout stream and be in a position to fish with ever-increasing delight and confidence. With a little advice from any experienced fisherman his progress should be rapid; he should have nothing to unlearn, and may, indeed, so far as science in actual fly casting is concerned, step down to the water-side more assured as to

his casting than the one from whom he has in other respects very much to learn.

One of the advantages of being an expert fly fisherman is that such a one, when he is travelling—either on business or on pleasure—and for so long as he has an hour or two to spare and can park his automobile, or rest for the night at some inn, near water which holds fish which will rise to a fly, can enjoy the delight of dry fly fishing on water which has possibly not yet been fished over by himself, and which, therefore, holds for him every kind of the most fascinating sporting possibilities.

Presuming, then, that a stream be sufficiently well stocked to warrant the assumption that trout may be found at any likely turn or twist in its course, and that you are fairly skilful with your trout rod, it will only be necessary for you to consider where your fish are most likely to be found during the particular meteorological condition of the hour at which you are fishing, and then present to them, in the most natural manner, a fly which is similar to the natural insect on which they are feeding.

THE CHARM OF THE UNFORESEEN

No fisherman, however skilled he may be, can possibly lay down any procedure which will prepare a brother angler for the unexpected and sudden changes in the struggles which are likely to occur after a trout is hooked, and which struggle—if the fisherman be using the finest tackle warranted by the character of the stream and the size of its fish—may imperil his chances of landing it, and therefore, for the moment, we will devote our attention to the manner of hooking our fish.

Supposing that individual rises are heralding feeding fish—that is, supposing that the trout are feeding on flying water insects and thus disturbing the surface of the stream—this indication will be sufficient for the moment to inspire the direction in which to cast your artificial fly; but when no rises are taking place, and when the surface of the stream sends you back nothing but the delicate half tones, the greens, the umbers, and the golds, stolen from the beauties of its banks, or permits you to catch some shy and passing glimpses of the mysteries in its deep and pellucid depths, then experience or memory may be called upon to assist those intuitive promptings which will determine the exact spot at which your fly should alight.

WET AND DRY FLY FISHING

There are two distinct and widely different methods of fishing with a trout fly, and these are known as the Dry and the Wet fly methods.

In the former, one fly only is used. This fly is cast up-stream to just above the rise, or to a spot just above that at which the trout is supposed to be lying, and after alighting is allowed to float down toward the fish on the surface of the water.

In the latter, two or more flies should be attached to the leader. These are cast either across and up-stream or across and down-stream, and in both cases are allowed to sink below the surface of the water. Wet fly fishing is in itself thus divided into two distinct variations. In the down-stream method of wet fly fishing, the flies, at the end of the leader, are allowed to sink well below the

surface, and to be carried down-stream toward every spot where trout may be lying. The stream is thus thoroughly searched by the flies, both fish and lure being invisible to the angler, and, in consequence, no dependence can be placed on the rise of the fish being seen, the angler having, in most cases, to trust to his sense of touch for a knowledge as to when his fly is taken.

In the up-stream method of wet fly fishing a short line is used, and each cast is made with the definite object of fishing either for a rising or for a feeding fish, whose position is therefore either known or assumed. The flies are allowed to sink a few inches below the surface and the rise of the fish should, in consequence, be more apparent to the angler, the fish in this case being mostly hooked by the angler's initiative in striking. This style of fishing is undoubtedly more interesting than fishing the wet fly down-stream.

In wet fly fishing up-stream, the successful angler is in most cases dependent on his skill and alertness in striking, for his fish. In wet fly fishing down-stream the angler is dependent, in most cases, on the chance of the fish hooking itself, and in this respect alone it will be admitted that the greater interest must centre in fishing up-stream.

ADVANTAGES OF DRY AND WET FLY METHODS COMPARED

The general consideration of the relative merits of these two methods of fly fishing is often obscured by the overshadowing idea of filling the basket.

To the dry fly fisherman the weight of his creel takes second place to his love of the methods he employs.

Personally I prefer to fish with a dry fly, even if I achieve nothing but an occasional rise, to fishing with a wet fly and killing a number of fish. Nay! I can regard with perfect composure the success of a brother angler, who, in using the wet fly, or even the worm, on the same water that I am fishing, fills his basket and finds me with but a brace of fish. It is the delightful method more than its success which inspires the dry fly fisherman.

However, whether the angler elects to fish by the Dry or the Wet method, the essential object he has to achieve is to throw his line and fly in the lightest and most accurate manner. He should remember that the more nearly he can extend his line in the air in a horizontal direction in his forward cast, the more lightly will his fly or line fall on the surface of the water. Lightness and delicacy of casting are especially necessary for dry fly fishing, as the line has to be cast more or less over the trout, and success will depend, therefore, to a great extent on skill in casting.

If the dry fly fisherman be using a fly similar in size and appearance to that which is being taken by a rising fish, and if his cast and line be thrown so that the fly alights accurately and delicately at from two to four feet above this rising trout's position immediately after a rise, and the fly is permitted to float on the surface of the water over the rising fish, the odds on the fish rising to this fly will be about equal, but if the fisherman, owing to his first cast being faulty, or to any unnatural movement of his fly, has to make a second cast, the odds against a rise by this fish will be as ten to one; and if, for a similar reason, a third cast at the same fish has to

be made, the odds may be regarded as about a hundred to one against a rise.

PATIENCE, EXPERIENCE AND OBSERVATION NECESSARY

To be successful in either of these methods of trout fly fishing requires patience, experience and observation.

Many excellent fishermen confine their fishing either to the wet or to the dry fly method, but while the most successful fisherman generally will be he who is in reality the master of both, there can be no question as to which method of fishing requires the greater skill or affords the more delightful and interesting pastime.

Every fisherman who knows how to use the Dry Fly prefers to use Dry Fly methods and it is perhaps for that reason good fishermen generally prefer the late, rather than the early spring months, for their fishing. There are times, of course, when Dry Fly men will know that the Dry Fly is not the most taking lure and that greater success would come to them if they chose to use the wet fly, but the majority will prefer to stick to their Dry Fly.

The forenoon of an early spring day will most probably find the trout feeding well below the surface and refusing to rise to the flies or insects which may happen to be moving or floating on the surface, but as the day becomes warmer or some meteorological change takes place, the fish will thereon rise—for a time at least—to a floating fly.

THE SUCCESS OF THE DIFFERENT METHODS OF FLY
FISHING COMPARED

The fishing diary of a well known clergyman, a client, is interesting as giving an instance of the comparative success of the two methods on the same water—The Deveron—on the same day and on the same water. It is as follows:—

May 10, 1889: Fished from 9:30 to 1:30 with a wet fly, using the Hareslug and Yellow Cotterel. Wind south, rainy and squally; then sun came out; wind dropped. Fished with Olive Quill, dry, and got most heavy trout. Total weight, 44 pounds.

On this day and on the same water another of my friends and I were also fishing. This friend was a Wet Fly man and he fished down-stream and did well in the morning with his favorite flies, but did absolutely nothing in the afternoon, and I, who used the Dry Fly, fished up-stream throughout the day, did poorly in the morning and equalled the catch of our clerical friend in the afternoon with my Dry Fly.

It will be readily admitted, however, by those who are skilled in both methods, that not only is the dry fly more successful during May, June, July and August, but that, as a means to sport, it is infinitely more fascinating and delightful than the wet fly. The tendency of every wet fly fisherman is toward dry fly fishing, and the often repeated statements: "Oh, it is too scientific for me," "I should like to learn," etc., are my reasons for dealing first with the dry fly method. The wet fly enthusiast will not, I assume, find in this work any points on which

to differ, and I trust, therefore, that the attempt to explain my views of the science of dry fly fishing will be of interest to all fly fishermen and especially of use to the student.

It is, therefore, to the art of dry fly fishing I shall first turn the student's attention, dealing with the wet fly later on.

CHAPTER II

THE SCIENCE OF CASTING A TROUT FLY

Necessity of Learning How to Cast—The Two Principles of Casting a Fly—How to Learn to Cast—Casting with the Single-Handed Rod—Position When Casting—The Backward Cast—Raising the Rod—Movement of the Forearm—Timing Extension of the Line Backward—The Forward Cast—Careful Consideration Required—The Fallacy of a Wrist Action—Perfect Control of the Rod—Movements Required when Casting, Diagrammatically Considered—Practising on the Lawn—Practising Over Water—The Application of Force to the Rod, and Its Results—Misapplied Force When Casting—Extension of the Line—Wrist and Arm Action—Unsound Theories Exposed—The Trout Rod a Portion of the Forearm—A Perfect Trout Rod—Sir Foster Cunliffe—A Definition of the Meaning of "Habit."

NECESSITY OF LEARNING HOW TO CAST

THE difficulties which are met with on an ordinary stream when fly fishing can always be overcome when one's methods of fly casting are perfect. It is, therefore, of the greatest importance not only to know how to cast, but how to cast to perfection. Bearing this in mind, the reader will, I hope, be induced to study most carefully the following description of how to make the various casts which are used when fishing.

The object of all casting is to get the fly to alight in some desired and definite place. To be able to do this to the best advantage, the line should, in the backward cast, be more or less extended in the air, opposite to the direction in which it has to alight. The smallest backward curve of the line behind the rod will, however, suffice for the forward cast, should any danger exist immediately at the back of the fisherman.

Natural dangers such as trees, bushes, cliffs, etc., and artificial difficulties, such as telegraph poles, barbed wire, etc., will prevent at times not only the overhead cast from being made, but also many of its other variations. Yet there will always be one variation, at least, which can be adopted in order to bring the line sufficiently back to be easily and accurately cast forward. The more completely the line can be thus brought back, the better the result in the forward cast. There is no place from which a fisherman cannot cast his fly, so long as he can bring his rod back in any plane, to its usual backward angle (see Plate IX), and so that, between his rod and the object, a clear space is open for the line in its forward movement.

In order to surmount any unexpected difficulty in casting, the variation of any habit is a more simple matter than attempting to make a new habit of a different method; that is, of course, if the mental processes which are responsible for the original habit are well known to the fisherman.

The movements of the two-handed rod are identical with those of the single-handed rod, but instead of the elbow acting as the pivot of the backward and forward cast, as in the single-handed rod, the pivot of the double-handed rod is situated at a point midway between the two hands, and so long as these pivotal points are respectively maintained, the upward and backward and downward motions of the two rods are respectively similar in every cast which can be made.

THE TWO PRINCIPLES OF CASTING A FLY

In the term "casting" I include all the movements of a fishing line made by the single or double-handed rod in lifting a fly from any place, and casting it, first, back to the same place, or secondly, to any other desired position.

¶ In the first place the former action means a movement of the rod backward and forward in the one plane.

In the second place it means a movement of the rod from the plane in which it has last moved into some other plane, and backward and forward in this new plane.

These two different methods embody the two principles under which every cast is made.

Every variety of cast must be grouped under one or the other of these two principles, but the second one, in which the fly is taken from any one position and cast to some other position, permits again of two variations, in one of which two distinct rod motions are made, as in the Wye cast (see page 59), and in the other, the rod action is made in one continuous motion, as in the Spey cast.

The casts made under the first principle are easily described and drawn, as they are invariably made in one plane; but the great difficulty of drawing diagrams relating to any curved casts is, that while these casts have to be made in more than one plane, the artist has only one plane in which to illustrate them, and for that reason the latter are, diagrammatically, somewhat more difficult to explain.

The casts which come under the first principle include all those which embody an extended backward and forward movement of the line, such as the Overhead, the Side, and the Galway casts, etc.

The casts which come under the second principle, the Wye, the Loop, the Switch, the Spey and the double Spey are generally made in order to avoid a danger within the radius of an extended backward cast.

HOW TO LEARN TO CAST

To ascertain the correct action of the hand which grasps the rod, when projecting the fly in the forward and backward casts, is the first and most important matter for consideration.

Every action deliberately performed in response to desire is made by muscles consciously or subconsciously controlled, and before they can be subconsciously controlled, i. e., before the action becomes a habit, the brain cells, or cells controlling the particular muscles which produce the action, must be educated by carefully repeated mental consideration of the exact movement or movements which will effect the object of our desire. The more resolutely we adhere to the habit of thinking out fully any movement we have to make, before allowing ourselves to make it, the more quickly will a correct habit be acquired and the more rapidly can we perform such an action without considered effort.

It follows from this, that when once a correct idea is established in the mind of the beginner, as to what he has to try to do, in order to cast a Trout fly, and also a knowledge of the immediate results which will follow

his doing this correctly, he will with very little difficulty acquire, as a habit, the basis on which correct casting rests, which is the ability to extend the fly accurately and delicately, backward and forward, to any desired spot.

The principle embodied in a well-considered auto-suggestion, should be adopted when learning, but not continuously repeated for more than two complete backward and forward motions of the rod—a pause of about one minute should then ensue and the process be recommenced. No lessons on one subject should exceed one hour in duration each day, but the mind can be directed to a consideration of the exact actions which constitute each complete backward and forward movement of the rod, at as many intervals during the day as opportunity will afford, and the more frequent this mental consideration of the exact movements required, the sooner will a correct habit be formed.

CASTING WITH THE SINGLE-HANDED ROD

When learning to cast a fly it is advisable to do so over grass and not over water, because when casting on a lawn, no difficulties other than those of acquiring a correct habit in casting will be encountered. The line, when projected forward, will lie on the grass, and no matter how long it be left there, it will not alter its position, or become any more difficult to manipulate, by the delay, and the attention can thus be given solely to the next correct thought which has to follow in the action of fly casting.

If the initial attempts to cast a fly are made over

water the difficulties will be increased by the fact that the line and fly will, after making the forward cast, sink below the surface, and the attention will be distracted by having to reel up the line, so as to get it above the surface of the water before again extending it in the backward cast.

In the preliminary practice any old rod, reel and line can be used, provided that the rod is not too heavy, and that the line be tapered and suitable to the rod. The student need not purchase an expensive rod until he has acquired the art of extending a straight and accurate line. When he is able to do this, he will then be better able to select a rod to suit his strength and his requirements.

I am going to assume that the reader knows how to put a rod together, to place the reel on the rod, and thread the line; but just here a word as to the reel—and I am now speaking to the right-handed fisherman. Always use your left hand for manipulating the reel—that is, have the reel fixed on the rod so that its handle is pointing towards the left hand when the rod is being used. It is quite a simple matter to learn to use the reel with the left hand, and it is of infinite advantage to the fisherman, for the rod can thus be always retained in the right hand, after striking a fish, avoiding the risky and, in my opinion, unnecessary changing of the rod from right to left hand when a fish is hooked, and leaving the left hand free at all times, for the landing-net, for manipulating the line and reel, for one's pipe, etc.

The rod and line being now ready, take your stand in

the middle of the lawn. The rod should be in your right hand, pointing forward, the reel being on its lower side, and your hand firmly grasping the butt, with the thumb extending along the upper side.

POSITION WHEN CASTING

The position of your body should be as follows (see Plate I). The right foot is advanced and pointing in the direction of your line, the left foot slightly behind and pointing to the left, the weight of the body resting on both feet, the right shoulder forward, and the body erect.

The upper part of the right arm should point downward, with the elbow slightly in advance of the body, and the forearm be extended in the same direction as the rod, which latter must be held firmly and pointing nearly horizontally. (See Plate I.)

THE BACKWARD CAST

Now the object you should have in view is to learn how to cast your line and fly straight in front of you, and it will be evident that before casting forward you must get the line more or less extended behind you; thus the back cast—which effects this—is the first and probably the most important thing to learn; therefore I want you to practise this back cast before attempting to make the forward one.

I will later on describe how a forward extension of the line is generally acquired, but we will assume that you have already extended—which is a simple matter—about twelve yards of your line on the grass in front of you.

There is one important point to remember: the right elbow must become a pivot of the rod, and the hand must be the socket, which, with the wrist rigidly controlled, makes the forearm and the butt one continuous portion of the rod.

RAISING THE ROD

Now *raise* the point of the rod *steadily* and *vertically* upward—done in order to bring the line to the surface of the water—and without stopping this lifting movement of the rod, convert it into a smart backward switch, to definite and considered angle of about twenty-two degrees behind the vertical. (See Plates II and III.)

The vertical lift upward of the point of the trout rod is made, not only to raise the line well from the water, but in order that the hand which lifts the rod may have plenty of distance to move horizontally backward in the direction in which the line is to travel in the back cast.

Plate II and Diagrams 1 and 2 show clearly the correct position of the rod and arm at the end of and during the back overhead cast.

MOVEMENT OF THE FOREARM

If the forearm be brought backward, *accelerando*, until the thumb nail is checked by the peak of the cap, and if the thumb is used to stop this action of the rod at that point, the wrist will not be bent and the line will curl over the top of the rod and extend itself backward. (See Plate XI.) If the attendant impetus of the rod overcomes the rigidity of the wrist, it will simply be due to the fact that “attention” is not concentrated

on *the duty of the thumb*, which duty is to check the rod as it reaches the limit of its backward action.

The wrist must, however, be kept rigid, and therefore attention must be concentrated until this necessary muscular control of the rod becomes a habit.

In order that you may grasp clearly the kind of action required for this back cast, you should imagine that there is a small piece of wet clay stuck on the top of your rod, and that from the position as shown in Plate III you have, by a steady but increasing backward action of the hand, to force or switch this piece of clay off the rod top in a horizontal direction behind you.

This is exactly the kind of impulse required to extend the line backward.

Remember always that it is not violence, but vim, which results in a correct cast.

The force employed in the back stroke should be just sufficient to extend the line after the backward action of the rod has been arrested, and, having been thus extended, the line will—unless the forward cast be then made—fall on the ground behind you.

In making this backward action of the trout rod, you may find your line hitting the rod as it travels backward. This is probably due to a jerky instead of a smooth and gradually increasing backward movement of the hand. If a correct motion be made with the rod in this back cast the line will be drawn back, above the level of the top of the rod. (See Plate XI.)

The line should again be extended on the lawn, and the raise and back movements repeated, until you are satisfied that you are able to make the back cast correctly.

PLATE I



THE NORMAL FISHING POSITION.

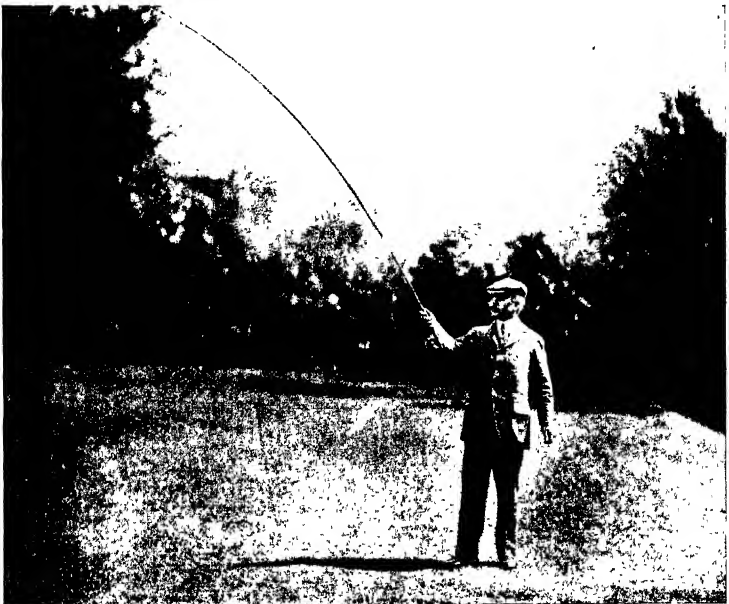
PLATE II



POSITION AT END OF BACKWARD
SWITCH.

Notice the left hand.

PLATE III



THE BACKWARD SWITCH OF THE TROUT ROD AS THE LINE LEAVES THE WATER.

If you wish to make the back cast without having your line extended on the lawn, shorten it, leaving only about fifteen feet beyond the top ring of your rod. Get into the first position again, but holding the line in your left hand, the rod pointing just above the horizon (see Plate I), extend your right hand slightly and at the same time lift it and the point of the rod together vertically (see Plate III), letting go the line and as it falls from you in a circular outward sweep, make the back cast as before, etc. You are now ready to make the forward cast.

TIMING THE EXTENSION OF THE LINE BACKWARD

Under average conditions I have determined that, with fourteen yards of line out, this pause should be about four-fifths of a second, which is about equal to the time we take in saying "and thumb"—a shorter line requiring a quicker, and a longer line a more drawn out, enunciation. If, then, the forward cast be made immediately after these two words have been uttered aloud, the rod being forced downward by the thumb, and the downward motion checked dead as the hand reaches the level of the elbow (see Plate I), a perfect forward cast of the line should be achieved.

This forward and downward motion should start from inertia and gradually increase in force until it is thus checked. In other words, the movement of the rod should be *accelerando* until it stops.

The action of the rod, when commenced, will be accelerated more rapidly in the forward than in the upward and backward motion. In the latter, the line, being on

the ground or water, cannot suffer by falling any lower, however slowly the rod may be moved when raising it, whereas, unless the forward acceleration of the rod movement follows fairly quickly on the back stroke, the line will fall to the ground, and the forward cast will suffer in consequence. Exactly the same proportionate increase of force must, however, be applied to the backward switch when once the rod point is raised.

When possible, the line should always be allowed to extend itself backward before the return stroke is made, as this is the most certain method of making an accurate and delicate cast forward. In practice, although the perfect extension of the line backward, at the moment the forward cast is made, may not always be effected, yet the attempt will be one which enables the fisherman to extend and shoot his line further than in any other style of overhead or side casting. This style has another advantage, in that it offers less difficulty to the beginner.

THE FORWARD CAST

At the end of this backward action and during the extension of the line, the rod being held firmly should remain stationary until the line has extended itself. This pause is necessary between the backward and forward casts in order to allow this extension of the line. It is the correct timing of this pause which is one of the secrets of a successful forward cast. This pause will vary in duration; the wind, the quality of rod, the length of line, and the force and speed of the back cast will all influence the velocity of the backward-moving line, but whatever the length of the pause may be, the forward

cast must be made by a downward and accelerating motion of the rod.

At the end of the back cast the fly should have arrived at its highest point of elevation, the point of the rod

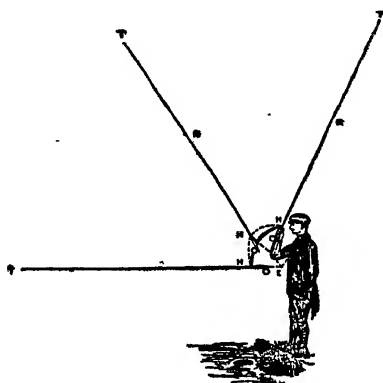


DIAGRAM I.

HRT and HRT—The rise and the backward movement of the trout rod.

HHH (dotted)—The two sides of the triangle through which the hand moves in making the backward cast.

HH (solid)—The third side of the triangle made by the hand in the forward cast.

being situated midway in the line between it and the place on the water where the fly has to alight.

At one time fishermen did not extend their lines behind them, and their overhead forward casts were made when their line was in a vertical backward curve or loop—in other words, they made their forward casts when their lines were in a position such as is shown in Plate XI. If the reader will turn to this plate and assume that in the picture the fisherman is making his forward cast, he will see that this forward impulse can only be directly transmitted to the shortest portion of the line, while a

good deal of the impulse must be lost in dragging the longer part of the line in the opposite direction.

While I experience no difficulty in casting in this particular style, so long as a perfect continuity of motion in the backward and forward action be sustained, yet I find that a successful wind cast is difficult, that my distance is more limited, and my accuracy less. In 1905, when first putting my theories into print, I had to consider whether a result equally good, so far as delicacy was concerned, would not be more easily acquired by permitting the line to extend itself backward before making the forward cast, and whether such a style would not give equal delicacy, greater accuracy, and better results when casting against the wind and for distance casting.

That I have succeeded in establishing the correctness of my theories has been generally admitted.

If the line be fully extended backward, every particle of the impulse of the forward cast will be applied to it in the right direction, and consequently a better result should theoretically occur in distance, and a greater accuracy be acquired, in that the pull will not be applied to a curve.

The forward cast, then, should be made at the expiration of the pause before mentioned: the force applied should gradually increase in strength until the rod is stopped at an angle of about twenty-two degrees above the horizontal level. (See Plate I.) This angle may be considered to be the normal one at which the downward effort of the overhead cast ceases, but the rod action may and is continued, to a still lower point when

making the "wind"—and other variations of the overhead cast.

In order to get this forward cast correctly, it may be advisable to imagine that you are now switching forward a small pellet of clay from the tip of your rod, and that it will be this sudden check to the rod action as it reaches its downward limit which causes the clay to leave the rod and fly forward.

Similarly will the line, actuated by the downward switch of the rod, unroll itself forward horizontally in the air as the rod is checked, bringing the fly immediately over the spot on which you wish it to alight.

CAREFUL CONSIDERATION REQUIRED

These instructions should be carefully considered, and practised, once or twice at a time, then a pause of say one minute should be made, the whole of the exercise not lasting longer than an hour. The student should endeavour to direct the end of the line to some definite mark on the grass on which the eye should be fixed. A friend may be asked to watch the rod, and to see that it does not incline backward beyond the angle shown in Plate II.

It is of the first importance that when the line is in the air and until it has been extended to its backward limit, it should always be under the influence of the force applied to it by the rod. The wind when against the back cast, will frequently destroy the backward energy of the line before it has fully extended itself, the end of the line thus becoming dead. The same result will happen if sufficient energy be not applied to extend

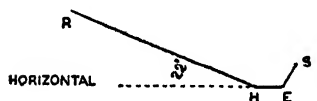
the line fully backward. This is a likely source of danger, as the forward switch of the rod will then communicate itself to the dead portion of the line with a jerk, which may crack off the fly.

Diagrams 2 and 5 show the increase of force given to the rod during the backward and forward cast.

As the student practises and acquires the correct action of casting, "shooting" the line will have to be considered and will present no difficulties; therefore, I should not advise him to let this adjunct to all perfect casting engage his attention just at first.

I can now condense this lesson into the following sentences:—

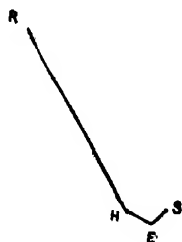
Starting from the normal position (see Plate I):—



1. Raise the *top* of the rod *vertically* to an angle of about sixty degrees (see Plate III), or if practising over water, until nearly all the line is off the surface, don't pause, but



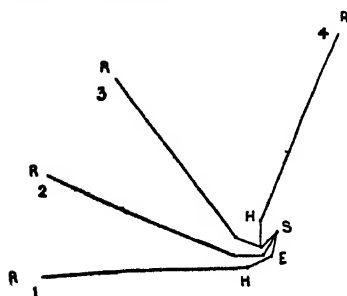
2. Switch the rod with ever increasing force *backward*, stopping it at an angle of twenty-two degrees behind the vertical line of the body. (See Plate II.)



3. Keep the rod stationary at this angle until the line has extended itself behind you, and then

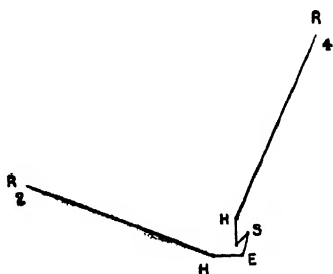
4. Switch the rod downward to its normal position, and as the line comes forward (see Plate I)

5. Lower the point of the rod as far as may be advisable until the fly alights.



Condensed into words it is as follows:—Raise (to R 3), switch back (to R 4) and Pause (at R 4).

Switch down (HR 4 to R 2) and lower.



In these Diagrams—

S represents the shoulder.

H “ “ hand.

E “ “ elbow.

R “ “ rod.

It must be evident that the more nearly a horizontal extension of the line is obtained, the more lightly will it fall to the ground or to the water.

THE FALLACY OF A WRIST ACTION

It is well, at this point, to disabuse the reader's mind of the old-fashioned notion that during the act of casting his attention should be given, in any shape or form,

to any other part of the body than the under part of the thumb and to the end of the first finger.

Modern writers, in their advice to their fisherman readers, emphasize an idea which—although shortsighted—was prevalent some fifty years ago—they continue to advise their readers to concentrate their attention while practising, nay, even while fishing, to the holding of their elbow stationary and firmly pressed to the side of the body—and even go so far with this advice as to suggest the holding of a book or a five-dollar bill, etc., etc. firmly pressed between the right arm and right side, in order to maintain the elbow in a stationary position.

This advice is given with the mistaken idea, that while the elbow should be the principal stationary pivot of the rod action, it should be supplemented by a delicate pivotal action of the wrist, and that the upper part of the arm should not move, or the shoulder act, at any time as a pivot when casting. If this heinous offence against the laws *they thus lay down* occurs, the punishment is swift and sure, the book or the five-dollar bill is dropped and falls into the water, etc.

PERFECT CONTROL OF THE ROD NECESSARY

This advice means that the rod, in its backward and forward action, has to be controlled by the muscles of the forearm alone, the forearm pivoting on the elbow joint; that the shoulder joint should not be moved, and to render the difficulties of the beginner still greater, these mentors insist on the necessity of giving a second pivotal action to the rod motion, by affirming and emphasizing the necessity of a *delicate wrist action*.

It is the writer's duty as well as his privilege to expose the mistaken idea, that, when casting a fly, wrist action is either necessary or advisable—that greater distances, greater accuracy—and an infinitely greater variety of different casts including the wind, the Spey, the double Spey, the Loop, the Switch, the Side, the Wye and the Galway—can alone be perfectly learnt and executed with elegance, delicacy and accuracy, by maintaining a habitual rigidity of the wrist and permitting the muscles of both the upper and forearm to control that which the *hand has* to do—in other words permitting these arm muscles to do the work for which they have been sub-consciously trained by each individual since the dawn of his life. These false guides have been endeavouring to persuade their followers to train muscles, to operate the wrist, in order to alter and to supersede the natural and stronger functions of the forearm, in its control over the motions and activities of the hands.

It is partly because our modern rods are so light and so delicate, that such advice as casting a fly with a wrist action has been tolerated, and also perhaps because, other than the author, no one has appeared to consider it worth while to analyze the physiological and mental activities associated with a correct method of fly casting, and thereon to formulate a system of casting which is physiologically correct and infinitely more effective than the methods of casting which had so far been accepted not only as being correct, but as being the best and only method of fly casting.

THE MOVEMENTS REQUIRED WHEN CASTING, DIAGRAM-
MATICALLY CONSIDERED*Practising on the Lawn—Continued*

It will now be advisable for the student to consider the above instruction in a more detailed manner.

Starting then from the normal position, i. e., with the forearm horizontal, the elbow slightly advanced, and the rod inclined upward above the horizon at an angle of twenty-two degrees (see Plate I), the attention has to be kept on the tip of the forefinger and the thumb, which, holding the rod, are steadily raised vertically about twelve inches.

If attention be devoted to the grasp of the thumb and forefinger, the rod will be kept in its original angle to the forearm. This raising action will increase its inclination to about sixty degrees above the horizon, and will bring its top ring to about ten feet above the lawn, the line being lifted well up, by this movement, from the grass.

The thumb nail will now be about level with the eye, the elbow lifted a few inches and advanced still further away from the body and the arm has straightened somewhat. (See Plate III.)

The lifting action is not checked, but is steadily accelerated into the backward cast, which is brought to a stop by the thumb as the forearm attains a vertical position. (See Plate II.) One of the objects of the accelerando movements of the rod, in its backward and forward action, respectively, is to give the greatest impulse to the line at the moment when the movement of the rod is checked by the thumb.

The wrist having been kept rigid by the attention devoted to the forefinger and the thumb, the rod, as it straightens itself, will be inclined backward at its correct angle—twenty-two degrees behind the upright.

This completed accelerating backward effort has

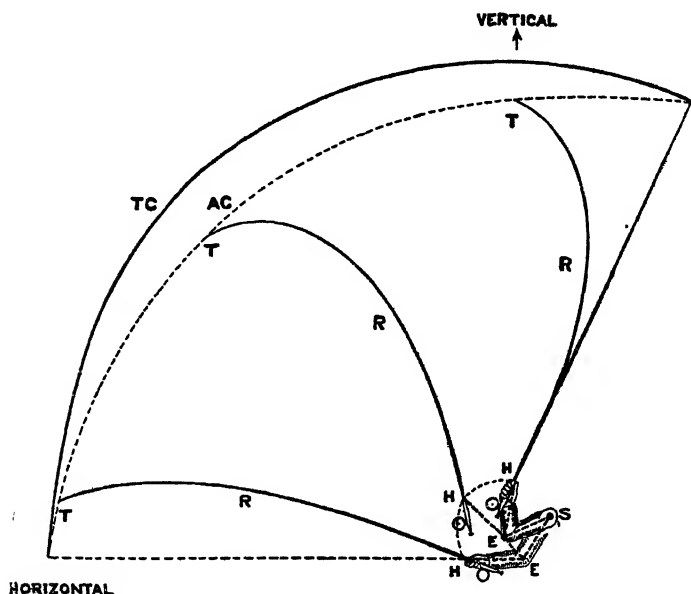


DIAGRAM 2.

Showing the curvature of the rod during the rise and the backward switch of the trout rod.

lifted the line smoothly but with ever increasing velocity from the lawn, and has drawn it after the top of the rod, and when the muscular force ceases the rod will straighten itself, and the line will unroll itself backward over the rod top.

After a pause of about one second, a forward, downward and accelerating pushing action of the thumb point

produces a rigid wrist and forces the rod point in a downward curve, this effort ceasing as the *forearm* arrives at the horizontal position. (See Diagram 5.) As the rod again straightens, the line unrolls itself horizontally forward, the fly being thus drawn forward towards its destination.

The great importance of keeping the fishing rod stationary, after its backward movement and before starting the forward movement in the over-head cast, cannot be too seriously considered and remembered.

No fault can be greater than that which permits the slightest backward or forward movement of the hand holding the rod, after it has completed its backward *accelerando* movement, that is, until it commences its forward and downward action. The hand has to hold the butt of the rod, just as each socket on the rod has to hold each separate piece when the rod is put together. Such a hold of the hand on the rod must become as habitual as is the hold on the pen by a writer who pauses in the middle of a word, or a sentence, to consider either the spelling of the word he is writing, or the next and most appropriate word he has to write.

When instructing my clients in Fly Casting I have found this particular fixity of attention, in the holding of the rod absolutely motionless at this point of the over-head cast, one of the difficult tasks to make into a habit, and perhaps the greatest difficulty I ever encountered in this matter was when teaching my first cousin, Reginald Downes Hughes, to cast a fly. The casting of Hughes—who had fished a little with the Trout rod but had never used a Salmon rod—was of a faulty character. One of

his principal difficulties was in achieving the absolutely necessary immobility of the rod in the interval between its backward and forward movements. The method I then invented—for his benefit and it has been of the greatest use to the many thousands of clients I have since instructed—was that of suggestion. The suggestion to be used by him at the moment the backward movement of his rod had ceased was to say out loud the words “and thumb” and that immediately he had uttered these two words—and not a fraction of a second sooner—he should make the necessary forward and downward action of his rod in his forward cast. Hughes found, as I anticipated, that the mental suggestion attached to the *consideration* of the words “and thumb” produced a rigidity of the wrist which kept the rod motionless for just so long as the line was making its backward extension, and that, after making a series of repetitions of these suggestions aloud, at this important moment of the overhead cast, he was able to obtain the necessary immobility of the rod—as a habit.

When however he was learning with the double handed rod to make the Switch and the Spey casts—in which no immobility of the rod is required at any one period of the cast—my difficulty was to *prevent* him from keeping his rod stationary after its backward action. I am pleased to say, however, that at his first tournament, the International Fly Casting Tournament of 1908, this fault had entirely disappeared, and he and another of my clients, Mr. C. Jeffcock, the well-known artist, took the first and second prize in the Spey cast and Switch cast, and he has since then been able to claim the

record cast made with the single handed rod in the Switch cast.

The curves shown in Diagrams 2 and 5 made by the rod point in the backward and forward casts are dissimilar.

As the forearm is raised the elbow acts as a moving pivot, and moves upward and forward, the shoulder thus

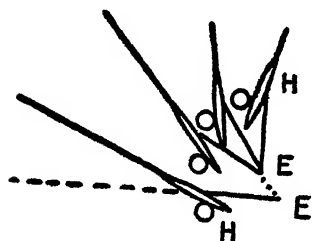


DIAGRAM 3.

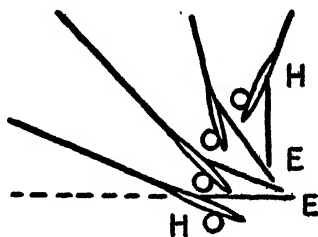


DIAGRAM 4.

Movements of the hand and elbow in the backward and forward casts.

H.—Hand.

E.—Elbow.

The reel, shown by circles, describes an irregular spherical triangle, as shown in Diagram 6, page 53.

becoming a second pivot until the lifting movement of the rod is converted into the backward action, at which moment the pivotal action of the shoulder ceases, and the elbow remains a stationary pivot during the rest of the backward action. (See Diagram 3.)

Two different curves will be made by the rod top in the back cast; in the lifting movement the rod point describes a segment of an ellipse with the shoulder and elbow as pivotal points, and in the backward movement it describes the arc of a circle with the elbow as pivot, the compound pivotal movement resulting in two curves as shown in Diagram 2.

In the forward and downward action of the rod, one curve only is made by the rod point; the pivotal movements of the shoulder and elbow, acting together in one movement, produce the elliptical curve as shown in Diagram 5.

In the forward cast, it will be seen that the forearm at the end of its downward effort is in a horizontal position, but that the direction in which the rod is pointed and held in the inflexible grasp of the hand is about twenty-two degrees above the horizon, the forearm being inclined to the upper arm at an angle of about 112 degrees. (See Diagram 5.)

As the line extends itself forward, the elbow falls back to the side, thus bringing the forearm, which finished in the horizontal plane, to twenty-two degrees below it, the *rod* attaining a horizontal position as the line having attained a horizontal extension drops on the water.

It is at the commencement of this final lowering of the rod that the slack line should be released in "shooting." When the fly has settled on the water, the forearm can be again raised as desired to its horizontal, *i.e.*, normal, position.

In the backward cast, the muscular action—which is gradually applied—has to be slightly greater at the beginning of the upward movement—for the rod and line have to be lifted, and the latter is checked by its frictional contact with the water—but though the movement of the top of the rod is thus checked, the velocity of the hand is accelerated. The higher the rod is lifted the less becomes its weight on the forefinger, and the less the pull of the water, yet its velocity has to be in-

creased, in order to keep the bend in the rod and thus to give the *greatest impulse* to the line *at the moment on which the backward effort ceases*. In the forward cast the frictional resistance of the water has not to be encoun-

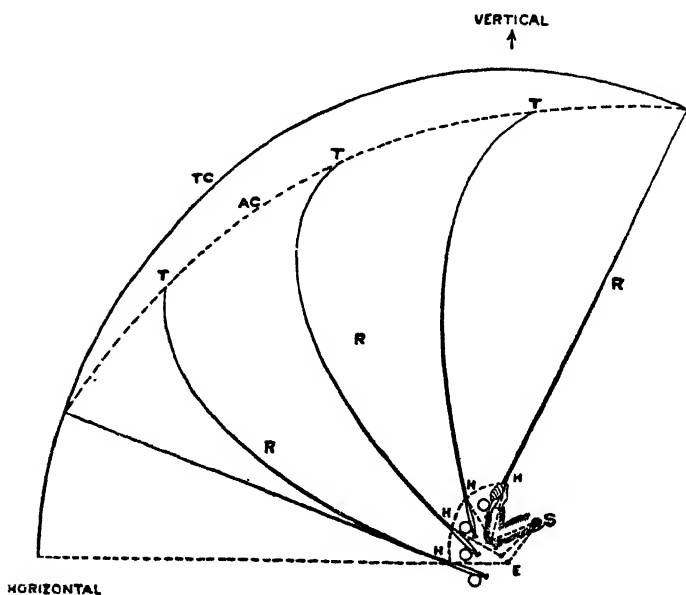


DIAGRAM 5.

Showing the curvature of the rod in the forward cast.

tered, and therefore the curve becomes more regular, the elbow making one continuous downward and backward curve. (See E, Diagram 4.)

PRACTISING OVER WATER

The student should soon acquire the ability to extend his line easily and lightly in any desired direction. He should always remember to point his right foot and to

keep his eye directed toward the spot at which he wishes his fly to alight.

When he has acquired accuracy in this important matter, he can commence his casting on any available and adjacent water. A fairly stout and well-soaked leader of gut, about six feet in length, and an artificial fly of fairly large pattern—about 14—should be attached to the tapered end of his line, the point of the hook being broken off. For his own convenience that part of the line he is likely to use, as also the fly, should be greased with mutton fat, etc.

He should anchor a wooden hoop in the water about fifteen yards away, and continue his practice, trying to cast the fly within the circle of the hoop, and endeavouring to do it in a light and delicate manner. When casting on water the necessity of steadily raising the rod before making the back cast will be appreciated.

When about to make a back cast the rod point should be lowered towards the water, and if there be any slack line it should be drawn in by the left hand. The rod point should then be raised vertically—so as to lift the line—this action culminating in the backward switch as the fly leaves the water.

It is good practice to attain the full extension of the line by a series of backward and forward casts without permitting the line to touch or fall upon the water, the back cast being made at the moment the line has extended itself forward. It not only enables the beginner to obtain a correct action, by striving for the horizontal extension of his line, but teaches him the time which it takes for the line to extend itself backward, the forward

extension being observable, and occupying about the same length of time as that taken by the backward extension.

THE APPLICATION OF FORCE TO THE ROD, AND ITS RESULTS

As the rod should be imparting its greatest impulse to the line at the instant the backward or the forward action of the hand ceases, the latent force communicated to and partially held by the rod—as shown by its curvature—is now able, as the rod straightens itself, to communicate its pent up energy to the line, and it is thereafter that the line passes the rod point, and, unrolling on itself, pulls the fly backward or forward to its destination. (See Plate XI.)

When correctly accelerating force is applied to the rod having an ordinary length of line, the line and fly must travel backward or forward, above, or outside the radial path taken by the top of the rod.

MISAPPLIED FORCE WHEN CASTING

If, however, at the commencement of the backward action of the rod, a snatching or jerking impulse is given, the line may overtake the rod at a lower level than its top ring, and may collide with it. When a correct impulse is given, the rod should not carry this latent energy (or bend) beyond the angle at which its switching momentum ceases, for the energy contained in the bend of the rod is imparting its energy to the line and this energy only becomes exhausted by the time the rod has straightened itself, at which time the rod point is below the level of backward moving line.

If then, at the end of the downward stroke, the fisherman finds his rod vibrating, thrashing the water, or hitting the lawn on which he may be practising, he will know that this is entirely due to a faulty method of applying force to his rod.

This fault may be compared to that known to golfers as "snatching."

If the backward and forward efforts in casting should be from nothing, *i. e.*, a position of inertia, to maximum, or in other words, be of an accelerating nature, then the reverse actions must be wrong.

To start the rod by a sudden jerking impulse, therefore, leads to the following results:—

In the forward cast the line is directed upward instead of forward.

The line unrolls forward on itself in a large curve, and its forward impulse is weakened by the frictional resistance of the air through which it has to travel. (See Diagram 8.)

The jerky impulse communicated to the line causes it to overtake the rod point before its forward and downward action is finished, and thus releases the bend in the rod, which latter vibrates and thus imparts a prejudicial undulation to the line as it extends itself forward.

It fails to extend the line.

It makes it difficult to cast against the wind.

In the backward cast the line is jerked off the water and has a tendency to fly upward and backward in a big curve and not only are the fish scared, but the cane rod may be strained and the wooden one snapped.

I have purposely avoided confusing the student's mind in the instructions contained in this chapter, and which might be caused by bringing in the arguments and the reasons which lie behind the mental and physical efforts he has to make, in acquiring a correct habit of projecting his fly backward and forward in the overhead cast, and while I think it quite possible that many of my readers may be able to acquire the overhead and other casts by carefully studying my directions, I feel assured that the greater number of them will appreciate a deeper insight into the laws which govern the most expeditious method of acquiring correct habits in those physical movements by which a fly is cast.

If the habit of extending the line and fly backward and forward, in the overhead cast, so that it falls with delicacy and accuracy at any desired spot, be acquired as a *knack*, and not as the result of a continued repetition of a carefully considered mental process, it will not—even if the knack be remembered—assist the fisherman in making the other casts.

When merely the *knack* of doing a thing is acquired by anyone, it is difficult for such an one, without a considerable amount of mental analysis, to explain the methods of doing it or to properly instruct others. He may say—"Watch me carefully as I do this or that, and try to do the same," and his pupil, after more or less labour, may acquire more or less knack, but it will not assist the latter to acquire any other style of casting, *i. e.*, unless he analyzes the knack he has acquired, finds out exactly what his muscles are doing, and then determines and varies the mental processes which should be

applied to his muscles in order to carry out the new cast.

If he knows what he has to think of in order to get his muscles to do their work, he can, when he knows how the rod should be moved in any one style of casting, be able to vary the mental process by which this former action was performed, and rapidly achieve success in any new method of casting his fly.

WRIST AND ARM ACTION

At no time when in the act of casting with a single-handed rod should the relationship between the rod, the hand, the wrist and the forearm be relaxed. Just as the metal sockets of each rod joint form the different lengths of the rod into one vibrant whole—so should the hand, with as subconscious a mental effort as that which controls the grasp of the fingers on the pen or pencil with which we are writing, make the forearm into another and final length of the rod.

To learn to do this, "attention" must be maintained and concentrated in the mind on the finger and thumb of the hand when holding the rod during practice, and continued until the muscles are controlled subconsciously—that is, until a correct habit of thus holding and using the rod is formed.

The line, being always attached to the rod, is affected by its every movement, and it is necessary, therefore, that the rod should travel through definite arcs, through definite planes, and with definite velocities, having a definite pivotal action, and being actuated by definite muscles. If the thumb and fingers holding the rod are

loosened, or a wrist action is enforced, the hand loses the aid of the principal muscles of the forearm, and a weakened impulse is all that can be communicated to the rod, to the line, and to the fly, by the muscles controlling the wrist. The wrist therefore should be kept under rigid control during the whole time in which the hand is holding the rod, when the fly is being cast, or when the rod is extended in the act of fishing.

When I refer to the mistake of bending the wrist and to the action so frequently alluded to by fishermen as a "delicate wrist action," I mean that bending of the wrist which permits the hand to move as on a hinge, in the same plane as that in which the fingers and thumb are fixed.

Now, the beginner will have to decide whether he will use those muscles which are always brought into play when any determined and controlled effort is made which affects the raising, lifting, or other motion of any article held between the fingers and the thumb—or whether he will attempt to educate muscles which have neither by evolution nor by practice, been employed when thus using the thumb or finger.

The muscles controlling the wrist are intended, and are used, by man for the main purpose of keeping the wrist rigid, in order that the muscles of the forearm can supply their energy to the work which has to be done by the hand. The mental processes controlling our hand movements have, through the many and repeated efforts and struggles of childhood and youth, become so intimately a portion of our every action, that the thought of any movement of a finger or the thumb is sufficient to

stiffen the wrist and thus permit their control by the muscles of the forearm. The muscles in the forearm are thus subconsciously controlled by the brain to this purpose, and it is only with the greatest difficulty we can acquire any other mental habit which will enable us to utilize other and less trained muscles, to carry out our desires in any but our accustomed manner. Hence the difficulty of learning to cast by making a separate muscular movement of the wrist. The effect of the rod on the line when casting is of an uncoiling nature, and the term "throwing the fly" leads to confusion in the mind of the beginner, who—associating the word "throw" with its usual meaning to hurl, to fling, in which the wrist is always kept rigid, etc., and using the muscle of his arm to that end—stultifies his object by introducing his "delicate wrist action" and endeavors, by a throwing action with the hand, to get the fly to its destination. The idea of *throwing* a fly should therefore be banished from the mind, and the brain used in a different sequence of thought.

UNSOUND THEORIES EXPOSED

Unfortunately, the ideas handed down to us by past authorities on the art of fly casting have resulted in our attempting to vary the universal method of using the forearm muscle in our every hand activity, with the result that effective fly casting has been made a habit most difficult and most tedious to acquire. Such a variation of a habit effectually displaces the natural dependence we should repose in the judgment of our own senses, and those who, following such advice, endeavor to effect

the backward and forward casts by a movement of the wrist, take much longer to learn, and are seldom proficient, while they lose the ability to distinguish readily and without a more or less prolonged trial, the most common and gravest fault in all single-handed rods, viz. the hit.

THE TROUT ROD A PORTION OF THE FOREARM

The rod should become, so far as its action is concerned, a portion of the forearm, and its elasticity should therefore merge into the elasticity of the arm, or otherwise, there will be a point at which an abrupt change from one to another condition of elasticity takes place. In other words, the hand which holds the rod should form a socket, which socket co-ordinates the elasticity of the rod with that of the arm from rod tip to elbow. A more or less abrupt change of elasticity must occur at each joint of the rod, but the strain of this is borne by the metal sockets, and the mechanical skill of the rodmaker is employed to merge the elasticity of the top joint into that of the butt end, and if the rod has a good action, this elasticity should merge through the hand used as another socket into the forearm, and thus it is that the muscles of the arm do their work, the elbow becoming the pivot of the rod action.

If the rod, however well its action be modulated from the top to its handle, does not continue to bind itself into the elasticity of the arm, there will be a hit, and this hit, though perhaps unobserved—when the wrist muscles which control the hand are fresh and untired—soon becomes apparent when the rod is in constant use,

and after a few minutes, an hour, or a few hours, as the case may be, the amount of his hit will most assuredly draw the owner's attention to the relative amount of this objectionable defect in his rod.

A PERFECT TROUT ROD

The dry fly rod then, whose parts are so relatively constructed as to give the best results when projecting the line and fly, and which brings the least strain on the wrist of the fisherman, will be the one in which no hit can be distinguished, when casting with the elbow as pivot, with the muscles of the forearm as the force, and the wrist as an inflexible connection—making the forearm and the rod into a vibrant whole from the elbow to the top ring.

SIR FOSTER CUNLIFFE, BART.

In order to emphasize this advice, and to assist my readers in appreciating these important observations on the fishing rod, and on its use, and with loving memories of a good man who gave his life for his country, a well-known writer and a great athlete, Sir Foster Cunliffe, Bart., and because he wished it, I insert the following letter:—

“April 26, 1923.

“Dear Mr. Shaw,—I must write you a short line of thanks for the most excellent lessons you have given me in casting. “I finished them with the feeling that for the first time I “really know something about the handling of a fly rod, and “that I thoroughly understand the principles on which the “various casts depend. I never realized before the degree of “power and accuracy which was possible with a rod, or that

"it could be attained so rapidly and by methods so simple. "I do not think that I can describe in fewer or more laudatory "words the peculiar excellence of your system of manipula- "tion and teaching. It seems to me that anyone of reason- "able capacity, by grasping and following out your instruc- "tions, can get a 'regularity of pattern' impossible under any "system less thorough; there is between yours and any other "teaching that I have ever received, the whole difference be- "tween what is scientific and what is merely empirical.

"May I say further that it seems to me that to anyone "who can practise it, your system affords a very satisfactory "test of rods and lines. Uniformity of method in casting re- "quires uniformity of rod-action; the one must accompany "the other if satisfactory results are to be obtained. Anyone "who has acquired your method of casting should, therefore, "be able to know by the feel of a rod whether it is a good one "or not; accurate mechanical action should give an accurate "mechanical test. If, as I believe, I am right in holding this "view, the gain to your pupils should be a double one; not "merely should they be able to cast, but also to choose them- "selves a suitable weapon. I do not think that there is a "better proof of the scientific soundness of your method.

"Moreover, by insisting not merely upon accurate move- "ments, but upon the principles that underlie them, you can "provide your pupils with a basis upon which they can con- "tinue and extend your lessons for themselves. I wish that "this science of physical motion could be applied to other "branches of athletics. I am inclined to think that the results "would be surprising.

"Believe me,

"With many thanks,

"Yours truly,

"F. C."

As we have already seen, all that is necessary in order to make an accurate cast with the Trout fly is—first, a

correct backward extension of the line away from the place at which the fly has to alight. Second, a returning extension of the line which carries the fly forward toward the position at which it has to fall.

Therefore it is, that when the student realizes the pathway in which his line and fly have to travel, a sequence of thought should be educated which, when trained, will compel the muscular actions which accomplish the desired results, *i. e.*, the accurate and delicate casting of his fly to any definite position.

The best method of acquiring the mental habit, which is thus necessary and which is all important, is through a series of self-suggestions embodying each separate mental process which is necessary to inspire the desired muscular movement. These separate thoughts are finally developed by repetition, into the required brain sequence, ultimately becoming the subconscious mental process known as "Habit."

A DEFINITION OF THE MEANING OF "HABIT"

Habit is a subconscious mental action which is instigated by the Will and is responsible for most, if not all, our everyday actions.

The correct consideration, by a person, of how to perform any muscular action should lead to its perfect reproduction. If, then, this consideration has been devoted to some absolutely correct and perfect action, the reproduction should, of necessity, develop into a perfectly correct physical action which will ultimately form the subconscious mental process known as habit.

The brain of man may appreciatively discern the movements made by another person, and his brain centers of imitation may enable him to imitate such movements or actions, and by a carefully considered series of imitative efforts, he may make these movements into a muscular habit. But such a habit is only associated with the imitative centers and can only be considered as a "knack," which knack, even when so acquired, can seldom be explained or taught to others. It must therefore be remembered, that for so long as these imitative centers are in control of his muscles, the said person may continue to perform this knack as a Habit, whether it be a correct or an incorrect one, but the action cannot be said to originate from any other than the imitative centers of the brain.

Thus it is, that the efferent mental processes, which compel the attended muscular action best suited to any desired result, should first of all be comprehended and then practised until this mental sequence, with its attendant muscular action, is made into a Habit.

In learning to cast the fly with a single-handed rod, the different movements, required of the hand and arm, are simple ones which we have been accustomed to make many times each day of our life, and each of such movements has thus become a separate habit. It is not, therefore, the difficulty of making each of these movements, but of co-ordinating them in a sequence, which should result in casting a fly properly.

I have by analysis dissected the mental and physical processes which result in a perfect method of casting, and have stripped every unnecessary item from the se-

quence of thought, other than that which is absolutely required.

The mental process of the student should therefore follow the outline which I have thus presented to his notice, which consists of three movements of the hand—

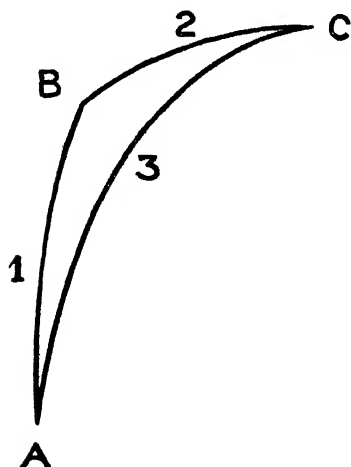


DIAGRAM 6.

Showing the three movements of the hand in making the overhead cast.

AB—Raise.

BC—Back.

CA—Down.

the upward, the backward, and the downward—or to make the matter still more plain, an action of the hand which follows the perpendicular, the base and the hypotenuse of an imaginary inverted right-angled spherical triangle. This mental process should be repeated at intervals and adhered to until it is made into a habit.

Diagram 6 illustrates the three movements of the hand in making the overhead or side casts with the single handed rod. It will be seen that these movements form the side of an inverted right-angled spherical triangle, the upward movement describing the perpendicular, the backward movement the base, and the downward movement the hypotenuse, of such a triangle.

It follows that these curves represent the relative movements of the top of his rod, although the actual radial path of the rod top is slightly flattened owing to the bending of the rod. (See T T T, Diagrams 2 and 5.)

CHAPTER III

DIFFERENT METHODS AND STYLES OF CASTING

Throwing a Fly—Casting a Long Distance—The Wind Cast—The Wye Cast—The Steeple and Galway Casts—The Side Cast or Horizontal Cast—The Loop Cast—The Switch Cast—The Spey Cast or Throw—The Loop Cast instead of the Spey Throw—Advice to a Client on the Spey Throw—Shooting the Line—Force Used in Casting.

THE following methods of throwing a fly will embrace every distinctive kind of cast which can be made with a single-handed trout fly-rod, and will be found to overcome every difficulty met with when fly fishing.

The reader will, I think, understand from what has gone before, that the pivot of either the single or double-handed rod action is in reality a moving and not a stationary one. (See Diagrams 3 and 4.)

CASTING A LONG DISTANCE

When endeavouring to “get out” a long line, you must always remember that you can cast forward a greater length of line than you can lift off the water. The final back cast should be such a length that you are absolutely certain, not only of lifting your line off the water, but of extending it backward ere making your final forward cast.

The secret of long-distance casting consists in the actual knowledge of the greatest length of line which you can lift and extend backward, and the ability to shoot, *i.e.*, get out a *still greater* amount of line in your

forward cast. To be able to cast a long, and at the same time an accurate and delicate, line is of inestimable use at times when dry fly fishing. The greater the distance at which you can reach your fish, the less necessity there is to crouch, crawl, etc., and it may be taken as an axiom that he who can cast a long and delicate line can, with equal ease, and even greater accuracy, cast his fly over any intermediate distance.

It is sometimes averred that the ability to cast a long distance is useless, because of the great difficulty in quickly striking a fish, but those who recommend a pause between the rise and the strike should not complain on this account. There are rises of trout which, in certain rivers, can only be covered by a long cast, and for this reason alone the ability to cast a long distance should be practised. That a strike can be more quickly made when a short line is being used goes without question, but unless a fisherman has practised casting a long line, he will be unable to take advantage of the chance offered when trout are rising at a greater distance from him, than that to which he usually casts his fly, either on a lake or river.

Lightness in picking the line off the water, when making the back cast, is one of the important factors to successful dry fly fishing, for more fish are scared, *i. e.*, put down by the disturbance caused by lifting the line from the water in a back cast, than by making a faulty forward one. It is therefore most important to remember that, prior to the back cast being made, the rod top should be lowered toward the water and all the slack line gathered in by the left hand, and that the rod point

should then be raised quietly and steadily upward, but with a slight accelerating motion, until the cast and fly are about to leave the water, when the final flicking backward motion should be given to the rod.

Lightness in the forward cast, as before mentioned, is achieved by extending the line, leader, and fly horizontally, before they are allowed to drop onto the water.

THE WIND CAST

A head wind was, until the last few years, regarded as one of the greatest difficulties, if not really the greatest, against which the fly fisherman has had to contend, but this view has now practically disappeared. In the first book on Fishing written by the author "The Science of Dry Fly Fishing," 1905, he says:—

"If the wind be against the fisherman, the downward acceleration of the forward overhead cast should be finished at a still lower level."

This advice is sound, and cannot be improved, remembering always that the wrist has to be kept rigid, and that the force applied to the rod culminates, as the rod is stopped, at the conclusion of the downward motion.

If the downward action of the *rod* be concluded at the *horizontal level* with a stiff wrist and with an ever-increasing downward velocity, the line and fly will be propelled forward at a lower level than usual, and the line will, in consequence, have considerably less ongoing curvature (see Diagrams 7 and 8), and the frictional resistance of the air which the line has to meet—even when there is no head wind—will have less chance of affecting the

forward extension of the line ere the fly reaches its destination.

The fly will thus have been brought to a point just above its destination on the water, on which it will drop

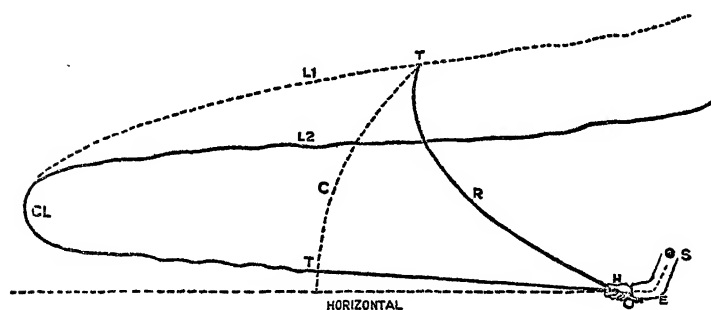


DIAGRAM 7

H R T Rod checked at this angle in downward action leads to CL. Small curvature made by advancing line.

with less danger of its being blown back than there would be if its ongoing motion ceased when it—the fly—was some four or more feet above the surface.

In other words, the less the curvature of the line as it unrolls itself forward, the less will it be checked by the frictional resistance of the air or of a head wind. (Diagram 7.)

The difference in the advancing curvature of the line in the forward cast, when the rod is checked at two different points in its downward course, is shown in the Diagrams 7 and 8. The reader will at once appreciate the very much smaller curve which the line—in Diagram 7—presents to the wind, when the rod action, as shown here, is finished well down.

THE WYE CAST

We must now consider the best method of projecting the fly in a direction other than that from which it is to be lifted. For unless the fly in the forward cast has to be returned in the same plane, it can only be returned

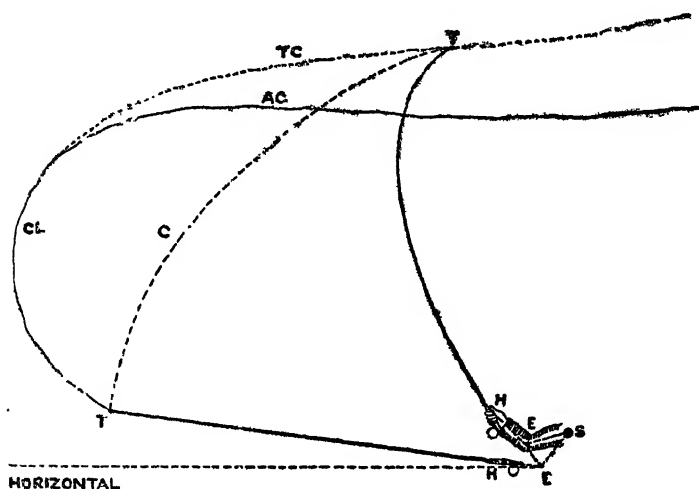


DIAGRAM 8

H T Rod checked at this angle in downward action leads to C L. Large curvature made by advancing line.

in some new plane, and, obviously, this new plane must be either to the right or left hand side. Directly this fact is appreciated, many of the difficulties which apparently accompany the consideration of the various casts which have to be employed when fishing must vanish, for every cast—which is made with a fly rod—must be some variation of the principles which enable a fisherman to cast his fly backward and forward in one plane, or those which enable him to cast from out of one plane

and thence into some new plane; that is, to cast his fly to some spot, either from his right to his left, or from his left to his right.

These alternations in the direction of the movements of the rod, when fishing up-stream, are made as occasion demands, from left to right, or right to left, but when fishing down-stream, so long as the fisherman remains on one bank and is not casting to a definite rise, his cast should always be made across and down-stream.

It will thus be seen that in any styles of fishing the only variations possible from the cast made in ordinary overhead methods, *i.e.*, backward and forward in one plane—are from right to left and from left to right.

We will assume that the reader is teaching himself to perfect this cast over grass, and that, therefore, he can make his movements more deliberately than he could if he were casting over water. The different positions which follow these movements can be checked by reference to the respective figures in Plate IV. When he has learned to make the different movements correctly, he can run these movements into one continuous action, and I should, therefore, advise him in the first place to do nothing other than acquire the different movements, one by one, referring to the respective figures in Plate IV.

We will suppose that the student is standing, as in Figure 1, and that he is in the act of raising his rod to the top of the rise, as in Figure 2. He should then turn—notice the feet—toward the directions in which he has to cast, as in Figure 3, leaving his arm and his rod, as shown in Figure 2. He should then move his arm and



FIG. 1 Slightly raising the rod.



FIG. 2. The top of the rise.



FIG. 3 Facing into the new plane



FIG. 4. The rod as it swings into the new plane.
The overhead cast is now made as before.

THE WYE CAST WITH THE TROUT ROD.

rod round at the same level, keeping the rod pointed upward at the same angle to the horizon, and bringing it into the plane in which he is now facing, his hand then being between his eye and the spot at which he desires his fly to alight.

These three movements—the rising of the rod, the turning movement of the body, and the horizontal side-way movement of the rod—should be practised separately, until they can be run into a smooth and perfect sequence. The position then arrived at will be similar to that shown in Figure 4, Plate IV, and this sequence must then be merged into the usual backward and forward movements of the overhead cast in the new direction.

When the student has perfected this new method, and made this sequence into a habit, he can then turn, in the *first place*, towards the spot to which he desires to cast, then, by raising the rod (as in Figure 2) to the required height in the old plane and swinging it with slightly accelerating force into the new plane, he merges it into the backward accellerando action of the overhead cast, and after the necessary pause, makes the downward switch of the rod which sends the fly forward to its destination.

Thus, if he be fishing down-stream and desires to make the Wye cast across-stream, the fisherman glances backward to the point immediately opposite to where he wishes his fly to alight.

If there be no danger in this new plane, he should lower the point of his rod to the water and gather in by the hand as much of his line as he deems necessary—keeping the point of his rod well down when doing so.

He then faces across-stream toward the spot on which his fly has to alight, and, *after* he has turned, steadily lifts the point of the rod upward in the plane in which it *has* been pointing, and then sideways with a gradually accelerated pace into the new plane in which his objective lies. If the movement is properly made, the rod point will be elevated from sixty to seventy-five degrees above the water, the rod will then lie between his eye and the direction in which he has to cast. By this time the fly is about leaving the water and the fisherman gives the flicking impetus of his backward motion and, after the necessary pause, finally finishes the cast forward and downward on the new plane.

The student will no doubt appreciate the fact that the methods of making this new Wye cast when fishing up-stream or down-stream or on either bank are identical.

Thus the fly can be thrown either to the right or left hand with either hand when fishing from either the right or left bank of the river. Other advantages of this Wye cast are as follows—A greater degree of accuracy is obtained, and the line, after finishing the cast close to the bank, clears it in the back cast; for it is brought out from the bank and travels across the stream by this method, instead of being pulled round backward over the bank, when making the back cast.

THE STEEPLE AND GALWAY CASTS

The Steeple cast, which is sometimes used to lift the line in the backward cast, over bushes, trees, and other dangers behind the fisherman, is somewhat similar to

the overhead cast, but in the backward movement the effort is as much *upward* as possible rather than *backward*, the force being applied in the first part of the backward movement. The rod is jerked upward and backward, and the arm is extended to its full length above the head, and slightly behind the vertical line of the body. The object being to throw the line over the dangers situated behind him.

A much safer, more effective, and prettier cast, however, which I have introduced in order to surmount or avoid dangers which may lie in the direction which the backward cast is required to take, and which entirely supersedes the Steeple cast, is the Galway cast.

The Galway cast with the trout rod should be made as follows: In the backward cast, as the line is steadily raised from the water, the body turns on the ankles to the right or left hand, until it faces the direction in which the fly has to go, and at the same time the hand holding the rod is turned or twisted round until the thumb is on that side of the rod from which the line is being drawn, and the reel is facing towards the direction to which the back cast has to be made. By the time this movement of the body has been made, the rod should have risen to an angle of seventy-five degrees above the water. What is really the backward cast has now to be made, but it has become a forward cast in the backward direction, and owing to the turning of the body, is one in which the direction in which the line has to travel can be accurately gauged, so as to avoid any danger of its being hung up. The idea being, to send the line either upward and over the danger, or to clear it on one or the other side.

Immediately the back cast is made the twisting movement of the hand is reversed, and the body again turns to its original position, in order to cast the fly forward to its destination. If the turning movement be not delayed, by the time the line has extended itself backward, the rod and the body will be facing the spot to which the fly has to fall, and the forward cast can then be made in the ordinary way.

Two plates are given, showing the Galway cast being made over the left shoulder, Plate V to clear the photographer, and Plate VI to clear an imaginary tree situated in a similar position. The backward action has been made in both instances, and the line is shown more or less extending itself to clear the above mentioned dangers.

THE SIDE OR HORIZONTAL CAST

The right or left side cast is made with a precisely similar rod action to the overhead cast. The rod is brought back more or less horizontally, to the right or left side of the body, and returned in the same plane, the object being to prevent the line rising to any height in the air. It is one of the most delightful and useful of all casts, and is the only one which can be used, when throwing a fly, to or from under trees, under culverts, or up narrow and overgrown streams.

In making the right hand side cast, the rod point should be lifted vertically, as in the overhead cast, and then brought down—with the palm of the hand up—to an angle of about 45 degrees to the right of its former direction, the elbow being the pivot of this movement

being allowed to fall well back to the right hand side of the body as this movement is made. The body should then turn on the ankles to the right until the eye can be easily fixed on a point about 115 degrees away from the position of the fly. A backward horizontal hitting action should now be made with the rod to the plane in which the eyes are fixed—this action will extend the line and the fly backward—directly away from the spot to which it has to be cast. The palm of the hand facing upward, the rod is stopped in its backward action by the thumb; the elbow is the pivot of this stroke. The turn of the body has to precede the backward cast, so that the eye can determine the exact plane in which the thumb has to check the rod.

It is only by a continued and ever increasing backward force applied to the rod through the hand and wrist, from the elbow, by the muscles of the forearm, that the best and most perfect impetus can be communicated to the line, in order to extend it perfectly in this backward direction. The best result of this force cannot be communicated from the forearm to the rod unless a rigid control over the wrist be maintained during the time the fly is in the air. A slightly upward tendency is advisable in this backward horizontal movement.

The position of the arm and rod at the conclusion of the back cast is as follows: The upper arm points downward, but is free from the body—the forearm and hand with a rigid wrist is extended, palm up, in a line with the rod, which is held rigidly and pointed to an angle of 115 degrees to the right of the direction in which the fly has to alight.

As the rod is checked at this angle, by the thumb, the body should immediately turn forward on the ankles, the eyes being now directed toward the spot to which the fly has to be cast—the forearm and rod remaining until this turn is completed—by which time the line will have extended itself backward.

The forward stroke of the rod has then to be made through the thumb from the elbow, with a similar muscular effort to that used in the backward cast; a slight upward tendency being again given to the rod in its forward motion.

To get a clearer idea of the angles made by the rod in the backward and forward motions of the side cast, the reader should take Diagrams 2 and 5 as being the horizontal, instead of the vertical, angles through which the rod moves.

As great accuracy can be attained by the fisherman then using the side cast, this method of throwing a fly is the best and most effective one which can be used, and that is my reason for devoting so much space to its consideration. Its advantages over the overhead cast are as follows: the rod is less noticeable from the fish's point of view, and it can be used under almost any circumstances. It is the easiest method of getting the fly under bushes, or when casting from under trees, shrubs, etc., and it certainly causes the fly to alight, when dry fly fishing, with its wings more perfectly cocked than in the overhead cast.

The advantage that the overhead cast has over the side cast is that it gives absolute accuracy and permits the fisherman to raise his line from the water more easily

and with greater delicacy, and also that it is not quite so fatiguing.

THE LOOP CAST FOR THE TROUT ROD

The Loop cast of the single-handed rod is made when danger exists both behind and to either side of the fisherman, and is sometimes useful when there is a strong wind blowing against the back cast, and when, as a consequence of these dangers or difficulties, the line cannot be extended backward or to either side.

The rod is steadily raised in a smooth and slightly accelerated upward and backward movement, to an angle of about twenty-two degrees behind the vertical position of the fisherman, as in the overhead cast, but inclining slightly to his right or left hand side. The line by this movement will be drawn back along the water, and a slight backward curve of the line will be formed to the right or left hand side, but well clear of the angler's shoulder. After the rod arrives at this position, its movement is altered into a forward and downward switch, made in exactly the same plane in which it has been brought back. The line, which has been drawn after the top of the rod in this continuous movement, will be held at the finish of the downward switch by the rod point, and will curl over it and, thus curling forward, will extend itself over the water in the direction in which the downward switch is made.

In Plate VII and Plate VIII the rod and line have been raised from a position to the right or left hand of the fisherman, and are being returned—as shown in these plates—in a new plane to a new spot. This movement is

effected by first raising the rod, as described above, to a position about twenty-two degrees behind the shoulder, and as the motion of the rod is being made, the body and feet are turned toward the spot at which the fly has to alight, and the forward and downward action of the rod is completed as before, but is now made in the new plane, as shown on the plates above mentioned.

The loop, like most of the curved casts, is extremely simple, and any difficulty there may be lies in the fact that the beginner will be nearly certain to make two distinct actions—an upward and backward one—as in his straight overhead casts, forgetting that both of these actions are merged into a continuous smooth backward motion in order to keep the line on the water. The backward movement should be neither a jerk nor a switch, but a very steady pulling action which is continued until the rod reaches its backward limit, and is then converted—after the usual pause—into the forward and downward impulse, checked as the hand reaches the horizontal.

Both Plates VII and VIII show the finish of the final effort in the loop cast—the danger being behind the fisherman, and the fly having just left the water, leaving a disturbance on the surface to the left and right hand side. In Plate VII the fly is being cast from left to right.

In Plates VII and VIII the rod point has been raised vertically in the ordinary way by a steady upward action, but instead of its being *switched* backward from the water, the *drawing* action of the hand is continued backward, slightly to the right hand side of the fisherman,



THE LOOP FROM LEFT TO RIGHT—SALMON ROD

until the rod attains its usual angle of twenty-two degrees behind the vertical, the hand being lifted to the level of the eye and slightly *inclined* to the right of the body. This backward movement of the hand is now converted during the usual pause into a *slightly* upward action by lifting the arm, and terminates in the usual forward and downward switch of the rod. The wrist having been kept rigid, the line has curled forward after the rod point, and the disturbance to the left of the fisherman shows where it has just left the surface. Briefly, then, the action of the hand controlling the rod has been first upward and then backward, and then continued into the forward and downward switch.

THE SWITCH CAST

This cast, which is a side "loop," bears the same relationship to the loop cast that the side cast does to the overhead cast.

It is made, when the rod cannot be brought back vertically, nor the line extended backward, in the horizontal plane in which it has to be cast forward. The point of the rod is first lowered toward the fly, and after the slack line has been gathered in, the rod is steadily raised, so far as the bushes will permit, to the side, as in the side cast, and is then drawn backward in a horizontal direction to an angle similar to that which determines the backward action of the side cast. This backward movement is then converted into an upward circling action of the rod top, until it is as high as the overhanging obstacles will allow, and is then brought forward in an accelerating side cast toward its destination, the body

movements being similar to those made in the side cast. The height to which those forward actions of the rod can be made is determined by the overhanging danger—the tree, the arch of the bridge, or culvert, etc., under which the angler may be standing.

The first portion of this cast is obviously very simple; the line and fly are not flicked off the water, but are drawn backward on the surface, as the rod moves backward.

The latter portion of the cast, however, owing to its more limited scope of action, requires more practice than the loop cast; the correct forward loop of the line is created by the forward movement of the point of the rod. The hit of the rod must be made directly toward the spot on which the fly has to fall.

The wrist must be kept stiff, although the hand, as in the side cast, has to be twisted palm up, so that the thumb precedes the rod as it is brought back sideways, and as the circular and forward switching movement begins the thumb is thus able to force the rod forward.

THE SPEY CAST

The Spey cast, or throw, a variation of the Loop and Switch casts, has to be made when it is desired to cast the fly out of one plane into another, that is, to cast the fly from right to left when the rod has to be used on the left side of the body, and from left to right when the rod has to be used on the right side of the body, when dangers threaten any extension of the line up-stream or behind the fisherman. The most common use which this cast is put to is in making a new throw out and across



THE END OF THE LOOP CAST WITH THE TROUT ROD.

Notice the disturbance of the water as the line unrolls forward



THE END OF SPEY THROW WITH THE TROUT ROD.

Notice the disturbance to the left as the line leaves the water.

stream when fishing down-stream. After any cast made from the river side has been fished out, the line of the fisherman will naturally work round into his own bank, and a fresh cast will then have to be made in order to extend the fly across the water which has to be fished.

The easiest and most useful cast for this purpose is the Wye cast as described on Page 62. If, however, any danger exists behind the fisherman, he should then adopt the Spey throw,—as follows.

Taking the danger as being close to, behind, and parallel with the bank on which the fisherman stands (see Plate IX), it is obvious, first, that any great extension of the line behind him is impossible, and, secondly, that the complete extension of the line up-stream will only place it in a position almost as difficult to cast from as that in which it now lies—that is, if a cast has to be made more or less across stream (see Plate IX), in the direction in which he is facing.

The fisherman, after taking in any slack line, raises his rod in its down-stream plane—in order to get the line well on the top of the water. He should then, after turning so that he faces across-stream to the place at which his fly has to fall, by a slight switch of his rod top, bring his line up-stream and deposit it on the water just above and clear of the plane in which his rod and line have to travel in making the fresh forward cast across-stream.

The small switch up-stream, in this cast, is made after the line has been brought well to the surface on the down-stream side, and the up-stream rod action concluded, when the rod point has passed the vertical and has

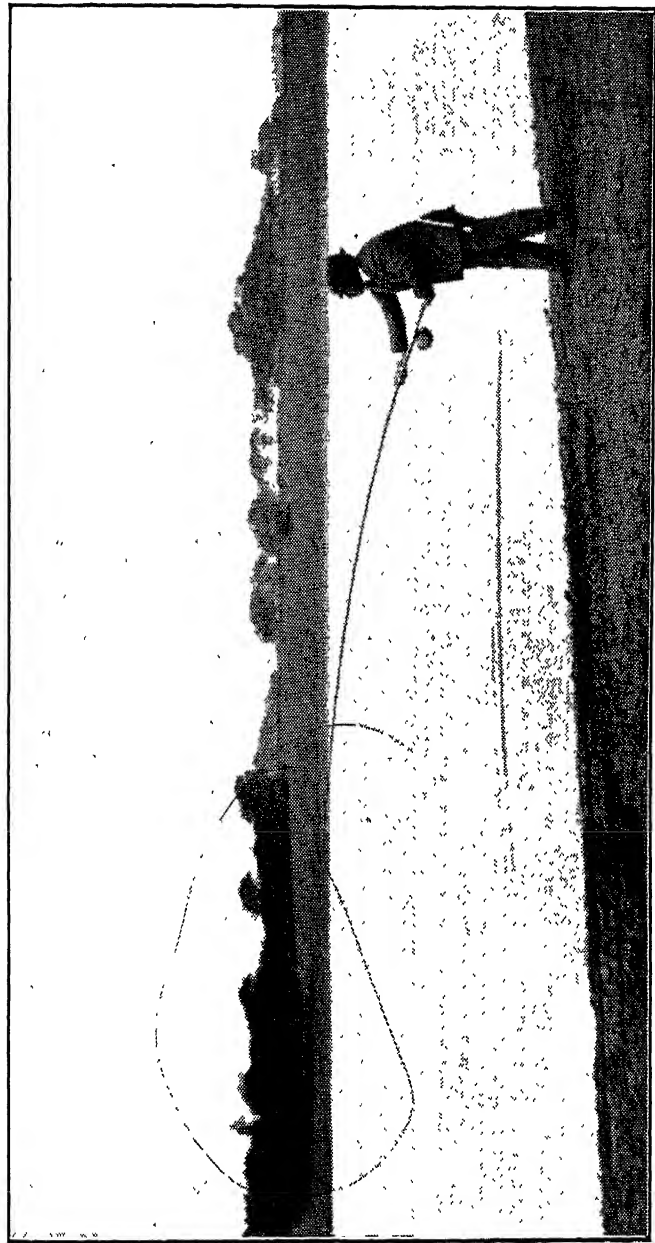
reached an angle of about 20 degrees up-stream; the switching up-stream action is then converted into a slow circling motion of the rod top round to the right, until it has reached a position behind the fisherman, and is in the plane in which the forward and downward cast has to be made.

When making the up-stream switch, the line should fall on the water up-stream, as near the fisherman as possible, for so long as the fly falls on his up-stream side there will be no danger of his fouling his line in his forward across-stream cast.

The great difficulty of obtaining a photograph of the single-handed rod in the Spey throw induces me to illustrate this particular cast, at the end of its downward action, by giving a photograph which I obtained when using the double-handed rod.

In both the single and the double handed rods the different casts are identical. If, then, the reader will assume that the cast is being made with the single-handed rod instead of with the double-handed rod as in Plate X, he will see where the line has fallen on the water in its backward action, and notice the fly, at the moment at which it is being lifted from the water, as the line progresses outward and across the stream at the downward finish of the Spey throw.

Before making the up-stream switch, it is better to turn toward the direction in which the fly has to alight. The backward up-stream switching movement of the rod can then be made, and the movement of the rod continued, in a small circling motion of the rod top, backward into the plane in which the fly has to travel for-



THE LINE EXTENDING ITSELF ACROSS THE WATER AFTER THE DOWNWARD SWITCH IN THE SPEY THROW.

ward into the forward and downward switch. This will thus give the small up-stream belly of his line enough impetus in the right direction, to cause it to drag the rest of the line off the water in a loop, which will bring his fly across-stream in the new and desired direction. (See Plate X.)

The curve of his line by which he has effected this cast has never been extended sufficiently behind him to foul the dangers of the bank, and the line on the water never gets into danger, as it only leaves the surface as it is dragged forward, across-stream, by the impetus given to the belly of the line by the downward action of the rod.

In the Spey cast (Plate IX), the danger is close to and behind the fisherman. The line, which has been extended down-stream, *i. e.*, in the direction of the reader, has to be propelled at an angle of about sixty degrees to the right and across the water. As stated above, the fisherman must first turn with his back to the danger, and face the direction in which he wishes to cast. He should then raise his rod and switch his line up-stream sideways to his right, to deposit the line and fly on the water beside him, and, after bringing his rod point round in a circling action, convert it into the forward and downward action of the rod.

With the correct action, the line at the conclusion of the downward motion of the hand, urged forward by the gradually increasing impetus of the downward action and the after-straightening of the rod, shoots forward and, gradually unrolling on itself, finally brings the fly to the required spot.

The end of the line, in the Loop, the Switch, and the Spey casts, prior to its forward extension of the line, is held by the water, and thus prevented from fouling, the danger behind the fisherman.

In Plate IX, the disturbance caused by the end of the line leaving the water is shown in the left foreground of the picture. The difficulty of this cast consists in avoiding the fouling of the line, by making the fly fall sufficiently up-stream to the right of the fisherman to clear the downward forward action of the rod. (See also Plate X.)

The various attempts to explain how this useful cast is made appear to me to be varied only by the individual methods of each fisherman, who has had to learn his Spey throw by the aid of his imitative faculties, and the difficult task of analyzing the mental processes, by which he has acquired the knack, has proved too difficult for him to explain.

THE LOOP CAST INSTEAD OF THE SPEY THROW

When wading, with a danger close behind, the Spey throw, as just described, can be very conveniently discarded for the Loop cast. (See p. 67.) The Loop cast has this advantage, that it can be made without any danger of fouling the line.

If one desires to make the cast toward the right, the rod can be brought back to the left hand side of the body, the fisherman turning towards the right and making his downward switch clear of the line in the water, and toward the spot where he desires his fly to fall.

If it be desired to make the fresh cast to the left, he will bring his rod back to the right, as in the Loop cast, turning to the left and making his new cast also away from his line which lies on the water.

In this method, therefore, of using the loop cast downstream, there is no danger of fouling, for the downward switch of the rod has to be made in the same equally inclined plane as that in which the rod has been brought back.

The fisherman who stands on a bank cannot, as a rule, bring his line back in a loop cast on the down-stream side, on account of grasses, rocks, bushes, etc., and consequently he finds it difficult, if not impossible, to make the loop across-stream. If he tries to make this cast by bringing his rod back on the up-stream side, he must bring his rod forward directly across his fishing line, with the certainty of a foul, and hence the necessity for making the Spey throw.

If, when making the Wye cast when wading, the wind is blowing from behind and hindering the backward extension of his line, the Loop or the Switch cast can be used with excellent effect by either the Wet or the Dry fisherman.

ADVICE TO A CLIENT ON THE SPEY THROW

A certain difficulty will frequently occur when using the Spey throw from a boat, unless every precaution is taken to make this cast properly. A fishing client of mine, who has been using the Spey throw from a boat, in Canada, has recently written to tell me that although, when wading, he found the Spey cast to be both

easy and useful, he had when using it from a boat, after hooking his boatman several times, found this patient friend of his made such a fuss that he had to desist.

This is by no means an infrequent experience—boatmen, especially in cold weather, always appear to me particularly sensitive on the subject of hooks, they appear to think that a dry fly neither adds to the comfort nor to the beauty of their nose. As similar experiences are not uncommon among other fly fishermen, the following advice which I wrote to my client may be found useful:

“If the line with which you were making the Spey throw was fairly lengthy, and if the cast was properly made, there should have been no danger to anyone in your boat. Presuming that your boat was pointing with its bows up-stream, and you desired to cast your fly down-stream to a point about sixty degrees to the right or left hand side, and that you have a difficulty in extending your line backward in the Wye or any of the other casts, you should proceed as follows: The line being already extended down-stream the rod is lowered well toward the surface pointing in the direction of the line, the slack line, if any, is then taken in, the rod is then raised vertically until the line is well toward the surface of the water, it is then moved slightly outward from the boat but without lowering its point, on the side to which you wish to make your Spey throw. The switch up-stream is then made, the point of the rod in its up-stream movement stopping some twenty-two degrees beyond the beam of the boat. The elevation of the rod point should not be increased and it should deposit the line on the water some six or seven feet away from the side of the boat.

“As the body turns toward the point to which you wish to cast, the rod point makes a small circle round and backward

until it is in the plane in which the forward cast has to be made, and without a pause the forward and downward motion of the rod should then be made. Briefly, the raising of the rod top has to be a steady movement, the switch upstream an accelerating one—which is then continued into the steady circling backward movement of the rod top, and finished in the downward accelerating action common to all other forward casts.”

SHOOTING THE LINE. FORCE USED IN CASTING

The muscular effort required in lifting the line from the water and casting a fly depends on the length of the line which has to be extended, but the power used while learning is generally greatly in excess of that which is required. Beginners should remember that it is the method, or manner, of applying this force, more than its amount, which is important. It is vim, and not violence, which should be used. But as the exact force which is required in an absolutely perfect method of extending each cast is only attained after much experience, a slight excess of the actual force needed to extend the line takes place. When making the forward cast this excess will be sufficient to enable the line to *extend* itself horizontally in the air, and to give it, in its forward progress, enough impetus to draw through the rings of the rod, some, if not all, of the slack line which has been recovered, prior to the back cast, and which is being held by the hand of the fisherman. The method of thus extending the length of each cast is called “shooting” the line.

At the conclusion of the downward effort the rod has still to straighten itself, and until it has done so the for-

ward pull on the line *continues* to be accelerated, and the line must not be liberated in "shooting" until the rod has imparted *all* of this latent energy to the line. Unless the line be allowed to shoot, at the conclusion of the downward effort, its extension will probably be reached *before its impetus has been exhausted*, and the accuracy of the cast will suffer, because the fly—as the line straightens itself—will be jerked backward, and will fall either on the line, or in some manner calculated to frighten the fish.

"Shooting the line" should be the method used when the line is being lengthened, prior to the final cast, the line being drawn off the reel by the left hand, and held until the conclusion of each downward action of the forearm, when as the rod straightens, it is liberated and allowed to "shoot."

CHAPTER IV

THE DRAG AS IT AFFECTS THE FISHERMAN

The Drag as It Affects the Fisherman—Avoiding the Drag—Non-shooting Casts—Shooting Casts—The Drag and Its Remedy—Perfect Casting—The Latent Force Held by the Line—The Value of Analyzing Our Faults—The Value of Curved Casts—Mistaken Views—The Curve Discussed—The Bends of the Line in the Vertical and Horizontal Casts—How to Make These Bends—The Check and the Premature Release—The Right and the Left Side Casts and the Curved Line—Dropping a Curve Up-stream Across the Current—The Merits of a Curve in the Line.

THE DRAG

THE drag, a nuisance to all fly fishermen, occurs after the fly has fallen on the water and when some small portion of the line, between the rod top and the fly, travels faster than the fly itself, thus producing a sag or down-stream bend in the line. The end of the line to which the fly is attached, travelling faster than the current itself, drags the fly down-stream along, or below, the surface of the water. This unnatural motion of the dry fly will, of course, scare the fish, and the sag will prevent the wet fly fisherman from detecting the pull of the fish as it seizes his sunken lure.

The first kind of drag, and one which is most common and perhaps the least recognized by the fisherman himself, is that which occurs immediately his dry fly falls on the water, and this particular fault is due to the fact that the line is not dead when it falls, but has a distinct backward motion of its own, toward the fisherman, which affects the fly after it has fallen, dragging it toward the fisherman with an unnatural motion along the

surface. The fault—save when a strong wind affects the line and gives it motion—is, that if the cast has been correctly made, the shooting of the line has not been properly effected, and the line in such a cast has been allowed to extend itself and recoil, dragging the fly back towards the fisherman. A second kind of drag will occur, even if the casting and the shooting have been properly carried out, if the rod be not lowered toward the water in exact sympathy with the falling line.

In the latter case, the fisherman is supposed to be casting from the bank some feet above the water level, and if the rod has been checked in its downward course at the usual angle, the line, by the time it is extended, would be at a height of about six feet above the water. Owing to the fact that it has been correctly released, it has exhausted all its surplus energy in dragging out the spare line, has become quite dead, and is falling to the water. If the rod is not lowered and extended a little forward, the rod point will become the centre of an arc, of which the line is the radius vector, and the free line, being held at its heaviest portion cannot fall vertically but has a backward tendency, drawing the fly after it and thus producing the "Drag."

The Drag becomes the more noticeable if the cast be made from a bridge, and it then becomes more difficult to avoid.

A common form of drag will also occur after a fly has been thrown correctly, but when the line has to fall across water whose surface is influenced by currents of different velocity.

If a fish, for instance, be rising in an eddy or in still

water on the far side of a stream, and the fly be thrown directly across the more rapidly moving water, the middle portion of the line will alight on the more rapid part of the current, and will travel down-stream faster than the leader and the fly; this will most certainly create a drag which will neutralize the object of the fly fisherman.

AVOIDING THE DRAG

Under such circumstances, to place a dry fly which will remain naturally on the water sufficiently long to give the fish an opportunity of rising is, perhaps, one of the most tricky casts which have to be made.

Incidentally, this hinges on the ability of the fisherman to allow his line to fall on the water in a curve, instead of in a straight line. A line which falls on the water in a curve, made either to the right or left hand side, but bringing his fly to the notice of the fish, is undoubtedly useful, both in trout and salmon fly fishing. I will in this book, however, only discuss this problem generally, applying the principles which affect such casting, more in their relationship to trout fishing, and leaving the very important bearing which they may have on dry fly fishing for salmon, to a later work. For the moment, I can assure the reader that the difficulties of throwing a line which falls in a curve on the water have been greatly exaggerated, and that if he can make the side cast *correctly*, he can acquire the habit of so casting his line, leader, and fly, that the end of the leader and the fly will curve in any direction which he may desire.

The reader may remember that in my instructions in

the downward action of the overhead cast, I say, on page 43:

"The rod should be moved with an accelerating force; the movement starting gently and without a jerk. A jerky start may not only fail to extend the line, but *will certainly* bring the belly of the line downward or on to the water, before the line has extended itself."

Starting the motion of the rod in casting with a sudden jerking impulse is a very common fault, and it was while studying this fault and its result in casting, that I discovered an excellent method of throwing a fly so as to avoid the drag caused by a rapid stream running between the fisherman and the position of a rising trout.

When a trout is seen rising in such a position, a side cast should be made up-stream. (See Side Cast.) If the forward cast be accompanied by a jerky forward impulse, and the rest of the forward action be continued as before, this snatchy action will cause the line to belly up-stream, just as a similar snatchy action would cause the line to belly down toward the water in the overhead cast.

This up-stream curve in the line as it falls on the water, if this casting is properly made, will permit the fly to fall correctly and remain undisturbed on the still water until the more rapid run of the stream has swept the curved portion of the line from its up-stream curve to a similar curve down-stream—*by which time* the trout should have risen, if it means to take the fly.

This method of avoiding such a drag on the dry fly will also assist the fisherman when he has to encounter a similar evil when fishing down-stream with a wet fly,

which occasions what is known as a sagging line, *i. e.*, the belly of the line moving faster down-stream than the fly end of the line.

It will be seen that by adopting this method of casting, the line can always be thrown in a curve on the water. This curvature of the line on the water might be at times useful when the fisherman is immediately below his fish, for a straight line which brings a dry fly immediately above a fish may disturb the water, whereas if the fly be thrown immediately above the fish, as it should be, with such a curving action of the line, when dry fly fishing for salmon or very shy trout, there may be less danger of the fish being scared. To make this up-stream curve of the line, when fishing up-stream near either bank, necessitates the ability of being able to cast either with the right or with the left hand.

NON-SHOOTING CASTS

When using a short line in dry fly fishing, an expert fisherman can so control his rod and line as to impart exactly the force required to extend his fly to its required position, and "shooting the line," in such cases, might become unnecessary—were it not that such a fisherman may have to keep his fly floating on the water, over a comparatively long distance, and to raise more than a few feet of slack line from the water, in each cast, as his fly is brought back to him by the current.

When making short casts and fishing only a few feet in each such down-stream run of his dry fly, the line, as it comes back on its short voyage, can be lifted by an upward motion of the rod point, that is, instead of keep-

ing the rod point down—and taking in the slack, as it comes back on a longer run down-stream, and then shooting this slack line in making a fresh cast, he can, by lifting his hand, raise the rod point vertically while his fly travels the few feet of its down-stream swim, and still be always ready for a rise or a new cast, in which case, if he be an expert, he will not require to shoot his line.

SHOOTING CASTS

In the overhead method of casting a fly, however, “shooting the line” is essentially necessary in order to extend a fly with accuracy and delicacy under ordinary circumstances. It will be by the correctness of his methods of “shooting” that the average fisherman will best achieve the delicate casting of his fly.

Although a failure to liberate the line—at the correct moment—when “shooting,” may stultify the attempt to extend the line, the leader, and the fly, on the water, in a delicate and accurate manner,—the premature release of the line will produce an equally pronounced failure, in that the ongoing bend of the line loses some portion of its forward momentum, and the fly end of the line, instead of being extended, will tail back and fall in a curve on the water, with the fly down-stream.

In other words, when making either the right or left hand side cast, and just about the moment when the fly reaches a position in its forward progress level with the rod top, the line held in the hand should be liberated, *i. e.*, instead of holding the line until the proper moment arrives to shoot, the line should be liberated

prematurely, and the energy which has been given to the line—and which in an ordinary cast should be controlled until the correct moment for shooting—is lost, with some of its necessary propelling power on the fly, by dragging through the rings of the rod the line which has thus been liberated. The curving portion of the line, then, instead of effecting an unrolling influence on the lighter portion of the line, acquires a certain forward action which temporarily carries both parts of the line forward and, thus exhausting some of its necessary energy, fails to extend the lighter end of the line, depositing some portion of it, with the leader, in an outward curve on the water.

THE REMEDY FOR THE DRAG

A careful consideration of a premature release of the line in ordinary casting led to the discovery, by the author, of some results which may be turned to the advantage of the fisherman, in that some of these results produce downward irregularities in the progress and extension of the line when making the overhead cast, and outward curves in the line—as it falls on the water—if the rod be moved in any other plane than the vertical overhead cast.

If the irregularities are recognized and comprehended, they afford interesting opportunities to the dry fly fisherman, when confronted with certain well-known difficulties which are met with on the river side, such as the “Drag.”

In articles written by the author for the sporting press, he has already dealt with those rod actions which result

in the leader and the fly being diverted from their accurate and delicate extension, to extensions of so curved a nature as to permit a fisherman to cast his fly round obstacles such as trees, and thus to throw his fly to a fish which he cannot see, or to which it is impossible to reach by any other method.

PERFECT CASTING

If we consider the path taken by a fly in the ordinary overhead method of casting, we find that after it has reached its backward limit it is drawn forward by the line on its forward path, and with a velocity equal to the motion of the rod top, and continues to follow this communicated motion until the rod has straightened itself and imparted to the line all the latent energy communicated to it by the fisherman. Finally, the line, having exhausted its energy, comes to the end of its forward extension, and, with the leader fully extended, the fly falls on the spot to which it had been directed.

LATENT FORCE HELD BY THE LINE

There can be no latent force held in the line, between the top ring of the rod and the beginning of the outward curve in the foregoing line, after the rod has straightened itself; what impetus exists must be carried in the ongoing curve of the line, in its tapered end, and in the leader.

At the finish of the downward action of the rod, if the line were to be severed at the reel, the liberated line

would travel forward in a curve and would, as it lost its impetus, fall with the heaviest part of the line lying ahead of its lighter portion. But if, instead of being cut at the reel, a certain length only of the line is liberated, by shooting it, a somewhat similar influence would affect the line, but only to a limited extent. This partial and premature liberation of the energy held in the bend of the line would principally affect its lighter end, and the leader and the fly, which would probably fail to extend themselves, would fall in a bend, with the fly tailing behind the rest of the line.

THE VALUE OF ANALYZING FAULTS

The author, by carefully noting the casting of some thousands of clients, and by a careful analysis of the results of their faulty methods of casting, discovered that certain of their unorthodox actions can be so applied in Trout and Salmon Fly Fishing as to produce results which may on certain occasions become useful—such as the bend at the tail end of the line just described—even though they constitute very grave errors, in the ordinary methods of casting. It cannot be too constantly borne in mind, that by a perfect cast is meant the projection of an absolutely straight line *in the air*, so that the fly falls—wind or no wind—delicately and lightly, on the water, at the spot desired by the angler.

THE VALUE OF CURVED CASTS

Now this problem is one which concerns all those who cast an imitation of a flying insect on the water, whether

they are fishing for Salmon, Trout, or Grayling, etc., and its consideration cannot be omitted from this work, although it will be more fully discussed and illustrated in a work now being written in regard to "Fly Fishing for Salmon."

When effecting their so-called "curved casts," by which appellation they describe a line which *falls* in a more or less pronounced curve on the water, bringing the fly to the right, or to the left hand side, of the general direction in which the line has fallen—certain recent writers on Fly Fishing for Salmon consider that they can not only avoid the drag of the line on the fly, but, to a very considerable extent, conceal the fall of the line and leader from the ken of the fish.

MISTAKEN VIEWS

Personally, I have never found a fish so well educated, so shy, or so alert, as to become *more scared by a delicate leader and fly*, alighting on the water over its position, than when such a leader falls on the water to the right or left hand side of that position, *i. e.*, for so long as the leader and fly fall on the water correctly, and with well-considered delicacy—but it is also claimed by those who are, at last, taking up the question of Dry Fly Fishing for Salmon, that the salmon are not able to see a line so curved. (See Diagrams 15 and 16.) Such a supposition is due either to a lack of observation, or to a want of scientific knowledge, for a line which falls on the water, or appears anywhere within the circle of the fish's direct vision (see page 16), becomes more or less directly visible to a fish. This circle of direct vision be-

comes the larger, the deeper be the level at which the fish is lying, and consequently, the greater must become the curve, which would,—“an’ these writers were correct”—have to be thrown, if they thus hoped their line to escape the direct observation of the fish. But even if the greater part of the line falls without the circle of the fish’s direct vision—its window—the object so desired; by the writers in question—it must become visible to the fish, as the line breaks the under side of the surface of the water on which it falls. (See Diagrams 15 and 16.) In any event, some portion of the leader cannot be invisible to the fish, if it be attached to a fly, which has to be brought to their favourable attention.

THE ACTUAL CURVE DESCRIBED

In the overhead cast, the fishing line is projected backward (see Plate XI), in a vertical curve, which curve unfolds itself outside the radius of the top ring of the rod. If the energy given to the line does not exhaust itself *as the line is extended*, some initial energy must remain, and the final few inches, feet, or yards—as the case may be—will flick downward toward the water. Now this flick at the end of the line is always in the opposite direction to the curve in which the line has been unfolding itself in its onward progression—no matter in whatever plane the cast is made. If then, the cast is an overhead one, and the line extends itself fully before exhausting its forward energy, the curve in which the line has reached its limit will be reversed, and the fly and part of its own leader, etc., will be brought ver-

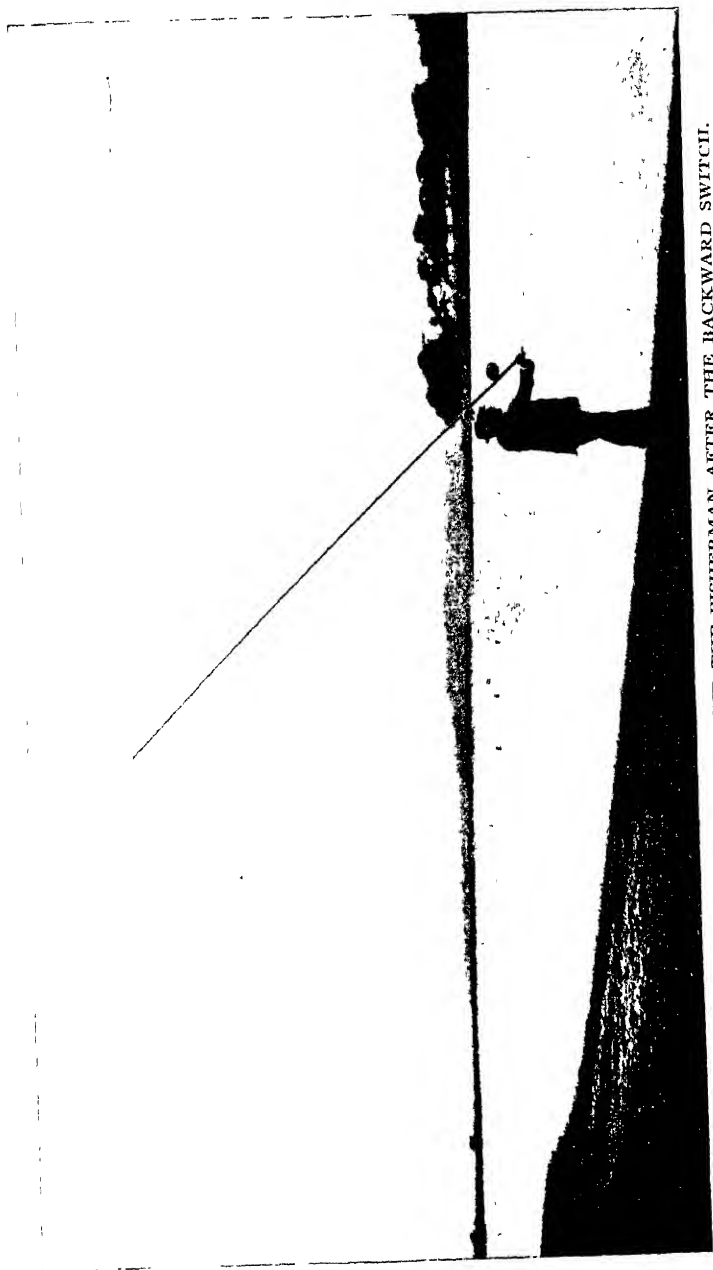
tically downward to the water, and some of the line to which this leader and fly are attached will probably fall on the fly and make a bad cast.

As the vertical plane in the overhead cast is replaced by casts made in various planes more or less inclined toward the horizontal, the direction of the rebound of the fly, as the line is extended, will take place in the more or less inclined planes in which the rod has moved.

When a forward projection of the line is made in the horizontal plane, the same reverse motion of the fly will occur—if the line, as it extends itself, retains excess impetus—but its direction will now be directly horizontal and inward, *i. e.*, the fly and the leader will be jerked round in an opposite direction to that on which the line has been unfolding itself, in its forward projection.

If the right hand side cast be made, the fly, as it extends itself, will be jerked or brought round in a left hand bend and with a degree of force in sympathy with the surplus energy possessed by the line as it extends itself. If the left hand cast be made, the fly will be brought round inversely, in a right hand bend and also with a relative degree of force, to the amount of surplus energy possessed by the line as it straightens itself.

To throw a line, then, in the side cast, the fly and the leader of which will curve inward, to a position directly above the fish, is the object which such fishermen have in view, and though it may for the moment—if the check be correctly applied—prevent a drag on their fly, the line will not be entirely invisible to the fish.



THE LINE EXTENDING ITSELF BEHIND THE FISHERMAN AFTER THE BACKWARD SWITCH.

THE CURVED LINE

It is hardly correct to claim that one can *cast* a curved line. The curve in the line occurs after the force has been applied to the rod and imparted to the line. The new element which is thereon introduced is one which serves to influence the latter part of the forward projection of the line and fly, and is of a retarding nature, which is best brought into action at the time the shooting of the line should occur.

The production of a downward and backward curve to the leader and fly, which is made in the vertical cast, is seldom required; but the curve which is most frequently useful in trout and salmon fly fishing is one which takes place, in an inward or in an outward direction as the line falls on the water, when making a cast which is more or less inclined to the horizon.

THE BENDS IN THE VERTICAL AND THE HORIZONTAL CASTS

There are but two bends of the line—of this character—which have to be considered, the bend which occurs in the inward direction, and the bend which occurs in the outward direction. These bends can only be produced in the plane in which the rod has moved in its forward action, and after the force has been applied to the rod, when making the cast.

HOW TO MAKE THESE BENDS AS THE LINE FALLS ON THE WATER

These two curvatures of the end of the line in the inward and outward directions are made, in the first

place, by the premature checking of a shooting line, or, in the second place, by the premature release of the slack line before the shooting action should take place.

When making the horizontal, or side, cast, with either the right or the left hand, if the line be checked in shooting, the line will fall in an *inward* horizontal bend, the bend being directly up-stream, and bringing the leader and the fly round, to the left or right hand side, respectively.

When however in casting the premature shooting of the line is permitted, the end of the line with its leader and fly will fall in an *outward* horizontal bend up-stream, leaving the end of the leader and the fly pointing down-stream.

The effect of the check to the line as it extends itself, or the effect of the premature shooting, is transmitted to the fly after the forward action of the rod has been made. In the latter, the premature release of the line at the conclusion of the forward action of the rod in the side cast will rob the line of sufficient energy to extend itself, and cause it to fall on the water in the curve in which it has been travelling forward, leaving a part of the leader and the fly pointing backward in the down-stream direction. (See Plate XV.)

It will be due to the skill of the fisherman in the use of a correctly balanced line, etc., that the fly will be placed in its desired position and thus effecting the purpose desired by the fisherman.

THE RIGHT AND THE LEFT SIDE CAST

Both the right hand and the left hand side cast will produce an inward curve, or trend of the line when the proper shooting of the line is checked, but, though this trend of the line may carry the fly to a greater distance inward, yet, the bend of the line will not fall in such a regular curve, as it will have when, instead of checking the line as it shoots, the line be allowed to shoot prematurely, in which case the curve of the falling line will have not only an outward but a more even bend.

In the right hand Side Cast, for instance, if the line be prematurely released, the line will lose some of its onward growing velocity and failing to extend itself will fall on the water in an outer or right hand curve. In the left hand Side Cast, a similar outward curve to the left hand side will be produced by similarly releasing the line. Thus by the premature release of a certain portion of the line, held in the hand for shooting purposes—the foregoing line, leader and fly will be robbed of some of the impetus which has been imparted to it, and which was necessary for the extension of its leader and fly.

The fly end of the line, losing a portion of the necessary forward impetus, by this premature shooting, will not have the power to fully extend itself, and the unextended line will fall on the water, in the curve in which it was travelling forward.

In the vertical cast employed by myself on the Namsen river in 1897—the fly was jerked backward and downward, and falling on the water, before the rest of

the leader had fallen, was by the influence of the current floated down-stream clear of its falling leader, and thus in no way alarmed the fish toward which it was travelling.

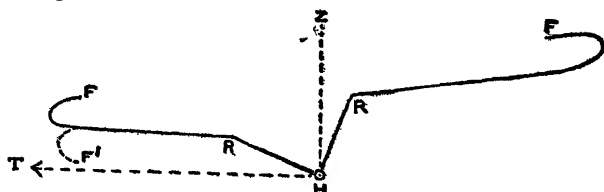


DIAGRAM 8A.

Showing curving end of line in side cast. H T, the direction of trout. H, position of hand. H R, the rod. R F, line with usual bend before extension. R F shows inward bend as line is checked; see dotted portion. R F, the outward curve which the end part of line takes as it falls on water when robbed of its onward impetus.

The curve of the leader and fly is always inward in the horizontal forward cast, *i. e.*, when the check occurs in the extension of the foregoing line (see Diagram 8A); but the curve of the line is always an outward one *when* it is robbed of its ability to extend itself. It is thus seen that the line, being brought up with a check as it extends itself in the cast, is jerked in a horizontal and inward direction, and in the other case, the line not having sufficient energy to extend itself, having been robbed of some of its energy in dragging out the line by the premature release—will fall in the same curvature which it has possessed as it has been progressing forward.

If, then, when the fisherman is casting up-stream, he finds it necessary to throw his leader so that it falls on the water in a left or right hand bend, thus bringing his fly round to the left or to the right hand towards his fish, he should use the side cast, giving a checking motion to the line when he wishes his fly to curve or be

dragged inward toward the left, and prematurely shooting his line when he wishes his fly to shoot in or fall with a turn to the right hand, and thus curve outward toward his fish. (See Diagram 8A, curves R F and R F.)

DROPPING A CURVE UP-STREAM ACROSS A CURRENT

When fishing across a stream to a fish, the curve which is required is, of necessity, an up-stream one. This curve will delay the fatal moment of the drag, and is made in one of two ways.

As described above, the cast is made to a point some little distance above the position of the fish, and the energy of the cast is destroyed by the premature shooting of the line. The curvature in the line, being unextended, is left in the line as it falls on the water, with an up-stream bend—the fly falling slightly above the direction in which the fish lies—delaying the obnoxious drag, which must occur, however, a little later on when the line has subsequently straightened itself, and become a down-stream curve. The variation of such a method of making an up-stream curve of the line, already quoted from “The Complete Science of Fly Fishing,” produces exactly the same results.

THE MERITS OF A CURVED LINE

The supposition that a line can be thrown up-stream so as to be invisible to a fish which is lying up-stream is incorrect.

In the first place it must be evident that, however near to the surface a fish may be lying, and consequently however small may be the window through which it

obtains a direct sight of external objects, a fly floating upon this window must disclose to the fish the fact that such a fly is attached to a line.

In the second place, when the line falls in a curve with the greater portion outside the window of a trout's direct vision, it will, as it falls, break the under surface of the water and will thus become visible to the fish. (See Diagram 16, page 301.) In any case therefore, some portion of the line, or the leader which is attached to the fly, must come within the vision of the fish, when the fisherman is casting up-stream; and the problem is one therefore which can be reduced to the more simple proposition of using fine tackle and skill in presenting the fly to the fish, and also of presenting the line in a curve when there is any danger of a drag occurring.

If the fly is to be fished up-stream from below a fish, then the matter of casting an accurate fly in a curve to the one particular inch—which it is now claimed is necessary when dry fly fishing for salmon prior to the spawning season—then, the matter is a difficult one which requires very skilled casting and makes salmon fishing much more interesting than formerly.

If, however, the fisherman, has to throw his line across stream, he may use a comparatively short line, that is, if the salmon toward the approach of the spawning season are indifferent to the approach of man or to his methods of casting, for it then becomes a very simple matter to throw a dry fly up-stream to the fish without permitting it to drag, and it means the throwing of the line and leader which falls in a curve up-

stream, and which is most easily accomplished by using the horizontal or Side cast.*

* This method of allowing the end of the line, the leader and the fly to fall on the water in an up-stream curve, was first introduced by myself in 1915—but in discussing the subject in question I was more particularly alluding to the throwing of the end of the line, etc., to a trout, situated in still water on the far side of a rapid stream, in order to avoid a down-stream drag of the fly, which is even more prejudicial to the rise of a trout than it is to the rise of a salmon.

CHAPTER V

MENTAL CONTROL OF THE MUSCLES WHEN LEARNING TO CAST

The Disadvantages of Knack—The Value of Mental Consideration—The Forefinger—The Influence of the Thumb in the Forward Cast—Mental Effort—Conscious Effort—New Muscular Movement—The Grasp on the Rod—Misplaced Attention—The Meaning of a Stiff Wrist—Misapplied Energy—Attention—A Quotation—Mr. G. C. Marryat—The Importance of the Muscles of the Forearm.

KNACK AND ITS DISADVANTAGES

I HAVE so far endeavoured to avoid confusing the mind of the student by introducing the reasons which necessitate the mental efforts he will have to make, in order to acquire the most perfect habit of casting a fly; and while I think that some of my readers will be able to attain proficiency in casting by studying the preceding chapters, I believe that the majority of those who wish to learn will welcome a deeper insight into the mental laws on which I base my method of instruction: because these laws control the most expeditious methods of learning the mental, and the attendant physical, processes of Fly Casting. If the habit of extending the line in the ordinary method of casting, viz., the overhead cast, be acquired—through the imitative faculties—then this habit can only be regarded as a knack.

Now, however well the fisherman may cast his fly, *when* he has learnt by this imitative method, this ability will not assist him to acquire, except with equally great

difficulty, any of the other styles of casting; neither will he, without a very considerable amount of mental analysis, be able properly to instruct others to attain that proficiency which he has been thus able to acquire in his own casting.

THE VALUE OF MENTAL CONSIDERATION

If, however, the student understands exactly what he will have to think about, in order to get his muscles to do the work required, say in the overhead cast, he can vary the mental process by which this action is performed, and thus achieve success in other methods of casting a fly. A system of training the brain, first, to appreciate, then to consider, and thereon to enforce any new muscular activity, must be the system which it is most desirable to adopt. Those who have been so trained in fly casting by myself, can more easily detect, and the more easily correct, their own faults, they can apply such mentally acquired methods to other tasks and, what is equally if not more important, they can impart their knowledge to others.

THE FOREFINGER IN THE BACKWARD ACTION

The necessary muscular energy in the upward, backward and downward movement of the Trout Rod should be effected by the muscles of the arm, and communicated through a rigid wrist to the hand holding the rod, the influences of the hand being dominated by the "attention" given to the grip of the rod by the forefinger and thumb. Just as in a musical chord, one note should be dominant, so in the "hand grasp" on the rod, the dominant influ-

ence should be that of the forefinger in the back cast, and the thumb in the forward and downward cast. This means that the dominant thought in the mind of the student must be alternately concentrated, first, on the forefinger, and then, on the thumb, when thus casting, but in neither case should the dual control of thumb and forefinger be relaxed.

When the backward cast has to be made—and when the line is already extended on the surface—the rod is first lowered towards the water, and the slack line gathered in by the left hand. The rod is then lifted vertically, by a steady and rapidly increasing upward effort of the forefinger. As this upward movement continues, the frictional resistance of the water on the line begins to diminish, and the lifting force of the forefinger gradually resolves itself into a quickening backward effort, checked, when the rod reaches an angle of twenty-two degrees behind the vertical, by the thumb, which, with the forearm, should then be pointing vertically upward. (See Plate II.)

THE INFLUENCE OF THE THUMB IN THE FORWARD CAST

The rod should now be dominated by the thumb until the conclusion of the forward cast. After a pause to allow the line to extend itself backward, the forward and downward action of the rod should be commenced, by a steadily increasing forward and downward pressure of the thumb.

The pressure, or forward push of the thumb, produces a forward bend in the rod, which acquires an answering forward and downward velocity, until this effort is

stopped at an angle of twenty-two degrees above the horizon; the action of the hand in checking it is still dominated by the clasp of the forefinger and thumb.

Now, however light may be the pressure on the rod, of the finger and thumb, in these duties, it is just as rigid in its effect on the rod, as is the grasp of the fingers and thumb on the pen holder, and as with the pen so with the rod, an absolutely controlled rigidity of the wrist will follow, which, in the case of the rod, prevents the wrist from displacing the elbow as the pivotal hinge of the rod action.

MENTAL EFFORT

If absolute and undeviating attention be given to the respective pressures on the rod, by the forefinger and the thumb, the elastic continuity of the rod and forearm is maintained and the pivotal action of the elbow is enforced.

Fortunately, the mental efforts of using the forefinger and thumb—which is necessary to effect the correct hold of the rod—has become such an habitual process in our daily life that we can apply it when casting a fly.

We have only to think of one of the many thumb or forefinger actions we make, in order to find that the turning of the hand, the wrist and the forearm into one rigid connecting rod, with the elbow as its pivot, is at once subconsciously effected. The conscious holding of the pencil between the forefinger and thumb, nay, the conscious holding of a blade of grass by them, will keep the wrist in rigid control, so long as *attention* to this *holding* action is maintained.

CONSCIOUS EFFORT

I use the word "consciously" with a definite and precise meaning, and mean, "*consciously thinking of how to make a definite muscular action while doing it.*" We have made the muscular control of the pencil into a habit, and we can now, therefore, make other muscular movements of the hand at the same time, *but no two original muscular movements can each be successfully thought out and successfully carried into effect at the same moment of time.* This important fact remains unrecognized among physical culturists and sporting instructors to this day, and results in the difficulty which they experience when coaching their clients. When writing, etc., as when using the fishing rod, a secondary and considered action of the wrist is not required.

But nevertheless, such a secondary wrist action can be easily made, by a secondary mentally controlled effort, *after* writing or *casting* has become a habit.

The habit of writing has been acquired during the long forgotten, but nevertheless wearying, hours of constant attention, during our youth. The mental habit of thinking in the finger and the thumb, when learning to write, is not taught to children: We have to acquire it, and the complicated muscular movements which have grown into the harmoniously continued action called writing are, as a rule, the result of an acquired knack acquired through the imitative faculties. Try to write with the left hand for the first time, and you will begin to appreciate the mental processes which are involved in that which has become one of the most common of the habit-

ual activities of the right hand; and yet were the child taught to write, in the manner in which I instruct my clients to cast, they would just as easily acquire the habit of writing with both hands—*i. e.*, ambidexterously.

NEW MUSCULAR MOVEMENT

In order to perform any new muscular movement, quickly and correctly, the effort should be controlled by a carefully directed mental effort, and it will be found as the muscles continue to answer to a repetition of this volitional effort, that gradually a correct habit is formed, and the student, however right or left handed he may be, by thus making any such a habit with one hand, in the auto-suggestive methods I have introduced, has acquired the ability to use his other hand with equal success in the accomplishment of this action.

It is thus that, having taught my clients how to cast the fly successfully with one hand, they find to their intense surprise that they have also acquired the ability to use the other hand in a similar cast, and with a success equal, in a relative degree of course, to the muscular development of each forearm.

It is the want of analytical thought, on the part of the instructor, which prevents his readily imparting the mental processes by which he subconsciously—*i. e.*, through habit alone—accomplishes his master actions. He may have a set of rules by which he instructs, but he rarely, if ever, enforces on his pupils the necessity of making those mental efforts and thought processes, by which alone each new muscular movement should be controlled. Such an one may say—"You should do this,

or that—in this way, or that way,” but he does not tell his pupil to think out each of the separate muscular movements before making them, and to continue to do each one separately and with forethought, before trying to combine them into one sequence.

THE GRASP ON THE ROD

The hand holding the single-handed rod should be actuated by the principal muscles of the forearm, but, without a rigidly controlled wrist, these muscles cannot communicate the full amount of their energy to the hand. Before attempting to acquire a wrist action therefore, it should be realized that it will become necessary for the beginner to educate distinct muscles in the wrist, in order to make a distinctly separate motion of the hand, with the wrist as the pivotal center of the motion, and that, in any case, such a motion of the hand cannot impart one-tenth part of the effective power and accuracy to the rod, which is conveyed in the natural manner—*i. e.*, by using the muscles of the arm to communicate their power through a rigid wrist—to that which the hand has to do.

In everything we do, with the thumb or forefinger or with both, at the moment of doing it, we subconsciously control the movement of the wrist. But writers on the subject of fly casting have insisted on wrist action—a “delicate wrist action”—being, according to them, the necessary adjunct to casting with a single-handed rod. By thus directing the attention of the learner to the wrist, and not to the forearm and thumb, they have hampered those who have depended on their advice, and

have actually sinned against the methods they themselves generally employ *when they are successfully* casting a fly. So far as this their advice is concerned, the mistake is generally due to a faulty analysis of the habits on which they depend. The movement of the wrist, in casting, *if made at all*, is purely a *secondary* and *unnecessary* action, depending on a separate and mentally controlled muscular activity, and that, if the wrist is used in casting as a hinge, it is so moved as the result of thought applied with this definite object in view, and with the mistaken idea of backing up or assisting the muscles of the arm when casting.

MISPLACED ATTENTION

The author, when teaching a lady to cast her fishing line in the backward direction, endeavoured to get her to raise her hand upward, and then backward toward her face, without bending her wrist (a stiff wrist being necessary for the successful accomplishment of the cast). When casting she had been always accustomed to bend her wrist, and when in endeavouring to follow the author's instructions—not to think in her wrist—she immediately thought in the shoulder, she found that by so doing she was absolutely unable to bring her hand from its raised position toward her face. The action should have been performed from the elbow, but, taking her mind from her wrist, she had concentrated it on her shoulder, and thus failed to move her hand. The author then said, "Oh, never mind—if you cannot do it now, we will be able, later on, to find some other way to make you do so; but, before proceeding, may I draw your

attention to the fact that you have a smut on your nose?"

Whereupon the lady's hand immediately went up to her nose, much to her astonishment. She made this quite natural action subconsciously; her thoughts being taken off her shoulder, subconscious activity instantly lifted the arm and the hand upward to her face in its usual way. In endeavouring to keep her wrist stiff, she had unconsciously included the muscles of the arm as being inhibited, and endeavoured to raise her hand with the wrong muscles—the muscles of the shoulder.

THE MEANING OF A STIFF WRIST

To tell the student, therefore, that a cast depends on a "delicate wrist action" is to focus his attention on his wrist, and lands him in a mental as well as a muscular muddle. The thought should for choice be focussed in the ball of the thumb or forefinger.

If we hit at, or even reach out and firmly touch, a definite object in front of the body, the hand becomes an inflexible part of the forearm, stiffening the wrist in every direction, and permitting the muscles of the forearm to supply the force necessary for controlling the blow, or the action of touching.

I hope my reader will not confuse my meaning. The wrist, before and leading up to the hit by the stick, the racket, the golf club, the cricket bat, the touch by the bow of the violin, etc., may, if so desired, be bent at will,—flourished, in other words—yet at the moment the attention is consciously applied to striking the object, playing the chord, etc., the wrist will not be so bent.

Now in the case of the fishing rod, this control is absolutely necessary all the time the rod is being used for the purpose of casting, *i. e.*, if it be desired to project the fly accurately and effectively. There is a wide muscular difference between the action of striking an object with a stick, hitting a tennis ball, etc., and casting a trout fly.

In the one the object—the blow—is achieved at a special fraction of time, and the velocity of the weapon increases to this climax, in order effectually to impart its force to the object struck, and so long as this force is correctly imparted, it matters not what individual flourishes or evolutions have preceded the impact; but the reverse is the case with a rod and line—the line is always attached to the rod, and for so long as this is so, all movements of the rod must affect it.

This fact may be illustrated, for instance, by the difference in the action between a fishing rod and a woomera—the stick by which the aboriginals of North Queensland throw their spears—for, while the spear, so long as it rests in the woomera, requires a definite and continued impulse, by the woomera, until it is discharged, *i. e.*, leaves the cup shaped end of the woomera, yet the spear's onward course is thereafter disassociated with the woomera, which can be dropped to the earth without affecting the flight of the spear. Not so the line, which is not disassociated with the fishing rod—its backward and forward course being very seriously affected by every movement of the rod—no matter how slight—*i. e.*, until the fly reaches the water, and the line comes to rest, until which time a rigid control of the rod to a definite pur-

pose, through definite angles, etc., has to be maintained.

The line to which the fly is attached cannot be thrown, and it has been the great mistake of the past, to try and throw it. It is, or should be by a continuous motion of the rod, projected, or, as it were, unrolled forward over itself—as it is held by the top ring of the rod.

MISAPPLIED ENERGY

I notice that in a recent book on the art of fly fishing, the author emphasizes the necessity of “keeping the hand tightly grasping the rod,” but at the same time condemns the use of what he terms a “stiff wrist.” This serves to show the extreme confusion of thought which characterizes those who, though they may be able to extend a fly to their own satisfaction, are yet unable to appreciate the muscular control of the wrist, which must follow, if they consciously apply themselves to this advice.

It is, besides this point, quite unnecessary to advise the beginner to grasp the handle of his rod as tightly as possible, if he wishes to cast a fly with accuracy and delicacy. The rod should be no more tightly grasped than is the pen with which a person writes. The hand should act as do the socket joints, which make one vibrant whole of a two or three piece rod, and a moment's reflection will prove that beyond these sockets forming a close fitting union between the different parts of a rod, the female portion of the sockets do not exercise the slightest grasping pressure on the joint they enclose.

The reason that people offer this advice is because they confuse the principles governing the control of the

rod, and possibly because they have been, or are, learning to *alter* the faulty dependence on a separate wrist control of the rod, into a forearm and hand control, and assume that it is by an excess of mental concentration on the *grasp* of the rod that they can conquer the older and faulty habit of bending the wrist. But none the less, the beginner should have no misconceptions on this important subject.

In the second edition of a former work (John Murray) I say—"If the rod be held firmly and with conscious effort, the wrist will not be bent, and the rod cannot go back beyond this angle"; again I say on page 219, "this grasp will of necessity produce a rigid wrist, and should therefore assist the sudden stop which is so important." It will be seen that this advice was given to my readers with the object of making them keep the wrist rigid when learning to cast.

ATTENTION

Prior to 1907 I had not discovered that all that it was necessary to do, in order to keep the wrist under control, was to confine the attention to the definite object of doing *something* with the forefinger or thumb, or that, if attention were concentrated on the pressure by the ball of the thumb, wrist action would be avoided. I knew then, however, and published the fact, that this mental activity—which a consciously enforced grasp of the rod entails—would prevent the wrist action from occurring, and hence my advice, the value of which—but not the mental law which attends it—is recognized by the author of the book previously mentioned.

It is not, however, necessary to make any increase in muscular effort, in order to attain that controlled rigidity of the wrist which is necessary when effecting ninety-nine out of every hundred of the daily actions made by the hand. This author quoted is, however, by this advice, unwittingly helping his readers, for he is preventing or neutralizing the faulty consequences of the *other advice he offers*, the necessity of a pivotal wrist action; for if "*attention*" be *maintained* in order to grasp the rod by the finger and thumb, *however light* may be the grasp, this enforces a constant angle between the forearm and the rod, and prevents a wrist action, and by so doing allows the most important muscles of the forearm to control the movement of the rod, a consummation devoutly to be desired, but which is defeated, directly a pivotal action of the wrist be introduced.

The beginner should remember, that the muscles he should employ in the different movements required in casting are those which he has, through habit, been using from his infancy in a variety of other and distinct actions, and although the object he has now in view when using them may be a new one, yet concentration of thought will soon link them into a well-ordered sequence as a portion of any such new habit.

The movements made by the hand in casting are three—the raise, the back action and the forward action—but each of these movements has in other of our everyday actions already become an habitual motion.

The object, then, is to educate each of these three actions separately but in a definite order, and as each of these movements begins to become habitual, to make

them into the one habitual sequence which is known as the action of casting a fly.

Should any cramped or stiff feeling be experienced in the fingers or muscles of the arm, etc., when practising, it will, if the mental process be a correct one, be due to an over-application of force by the muscles used in grasping the rod. A child will over-exert the muscles of his thumb and fingers by grasping too rigidly the pen or pencil when learning to write, and thus experience a similar sort of cramp in his forefinger or thumb.

It is because of that most erroneous of all instructions, viz., that which draws the attention of the beginner to an action of the wrist, when he is told "to carry out a delicate wrist action" that work is required from a system of muscles intended for and trained for the opposite purpose, that of stiffening and making rigid the wrist itself.

Attention should be concentrated on keeping the forefinger and the thumb to their respective work on the handle of the rod, until such concentration becomes unnecessary owing to the fact that "attention" has been replaced by a subconscious, *i. e.*, an habitual, action.

A QUOTATION

Mr. Halford, in his latest book, continued to advocate a pivotal wrist action in the backward and forward cast, and he says:

"I venture to suggest the best of performers do practically *all the work* with the wrist."

And later on he says:

"Some *few* fishermen cast with an almost stiff wrist and

use the forearm as the motive power. It is not a pretty style, but there are undoubtedly *many* first-rate fishermen who invariably adopt this method."

I have ventured to italicize the "*few*" and the "*many*" in this quotation, which may be considered somewhat in the nature of a deathbed repentance—but not a very gracious one; because he knew, when writing it, that his own personal and immediate relations, and many of his friends, and some 7,000 other fishermen, had entirely altered and improved their casting by lessons they had received from myself and by adopting the "stiff wrist" mentioned by Mr. Halford. I trust that I am not unduly optimistic in believing that I am generally considered as being the pioneer of the stiff wrist theory, by means of which I have perfected the casting of thousands of people. I have always recommended the muscles of the arm as the power to be employed in *all* and *every* sort of single-handed casting with a fly rod.

Mr. G. C. Marryat—than whom no better fisherman ever lived—not only used the thumb as the agent for controlling the inflexibility of the wrist and permitting the muscles of the forearm to do the work, but used his forefinger to assist the thumb, in doing so. The rods used then were not so light or so well actioned as those of the present day, and those used by Mr. G. C. Marryat were by no means the lightest even of those then built. Consequently, the aid of the forefinger to assist the thumb in its duty of controlling the inflexibility of the wrist is understandable, and was apparently used in order that the muscles of the forearm should effectively convey the force he deemed necessary in delivering his fly.

Many men are strong enough to get out a fairly lengthy line, and very often an accurate one, when obviously bringing into play a good deal of pivotal wrist action, but a closer analysis of their casting will show that in their forward casting they only use a limited wrist action; even this, however, is more or less corrected by its being converted into a forearm action, at the most critical and important portion of the cast, *i. e.*, as the downward action of the rod is being concluded.

At the conclusion of the backward and forward effort, it may be found by those who make the wrist one of the pivots of the rod action that their casting is improved by what they term a wrist action, and by which wrist action many of my clients have told me that they think they give a final and useful flick to the down action of the rod. If, however, they very closely consider this action, they will find out that this flick is, in reality, a deliberately executed thumb and finger action, which *stiffens the wrist* and permits the muscles of the arm to communicate the final downward impulse to the rod. In other words, toward the end of their forward pivotal wrist action, they permit the muscles of the forearm to do the work for which they were intended, *i. e.*, stiffen the wrist, and late as this control is on the rod, it yet materially improves their casting.

THE IMPORTANCE OF THE MUSCLES OF THE FOREARM

It is on the muscles of the arm, and the use of the elbow as a movable pivot, that the fisherman must principally rely, and if anyone doubt this, let his forearm be held rigidly by a friend, in any position, and let him see

of how little use his hand and wrist action is, in making his backward and forward cast when deprived of the use of the forearm. If, however, he will now fasten the butt end of his rod to his forearm above the wrist, by a handkerchief, he will be compelled to use the forearm and its muscles to cast with, the elbow being the pivot on which the movement must then be made, and he will then appreciate the fact that this produces a stiff wrist action and enables him to cast with the greatest ease and accuracy, and that it will add several yards to the distance to which he can cast his fly.

When a habit is acquired of thus using the forearm in the manner I advise, this independent pivotal wrist action—which has been so persistently recommended, and which has proved a bugbear to so many learners—will be found to be absolutely unnecessary and prejudicial to the best casting, and the student will then, as an after result, find that any secondary wrist action cannot, without definite “attention,” and without definite determination, be made. If, however, such a wrist action be definitely enforced by the brain, it will be found that the digitorum system of muscles will be replaced by the less efficient and opposing set of muscles, the extensor muscles of this group, which have to be brought into play and educated and trained in order to obtain the pivotal action of the wrist, advocated. And thus, not only will the accuracy and the limit of the cast be prejudicially affected, but an infinitely more difficult series of mental efforts will become necessary in so radically altering the habits of a lifetime.

All the clients I have coached (over 4,000) in Trout Fly

Casting, have been taught to use the hand as a socket of the single-handed rod—making the elbow into the pivot—the wrist being the inflexible connection between the hand and the forearm, and the muscles of the arm being used as the propelling power, with the elbow as a more or less movable pivot; and if the delight expressed in hundreds of testimonials and letters of gratitude can be accepted as evidence of success, or if success in tournament casting can be regarded as an index of the correct method of using the arm muscles, in the act of casting, then I think it must be evident that the method of casting I have introduced and established is the correct one.

CHAPTER VI

DRY FLY FISHING. A DAY'S COACHING ON A TROUT STREAM

Preparation for a Day's Fishing—Approaching the Water—The Fly and the Rise—Different Aspects and Methods of Fishing—Oiling the Fly—Greasing the Line—Vision of Trout—Fishing the Stream—Striking—Changing the Fly—Netting the Fish—Methods when Fishing—A Taut Line—The Rise and Its Advantages—Fishing the Rise—Striking Discussed—Keep Your Eye on the Fly—A Fighting Fish—A Jumping Fish—Undersized Fish—Handling a Trout—A Killable Age—The Broken Hook—The Fly Retriever—A Big Fish—A Wrinkle.

PREPARATION FOR A DAY'S FISHING

I WILL assume that the reader has already mastered the ordinary overhead style of casting a fly, and that, therefore, he is competent to begin fly fishing for trout. He is not at present obliged to know or acquire other styles of casting—however much these would add to his pleasure and skill in fishing—but as this is his first visit to a trout water, and as he may have no friend at hand to answer his questions, to show him where to throw his fly, or to tell him the nature and habits of the speckled beauties he is so anxious to secure, I must lead him still further afield in the study of this delightful and engrossing pursuit, and show him not only where to cast his fly, but how to determine what fly he should use, where the fish are to be most readily found, and how to catch them.

With this object, perhaps, you will come with me for a few hours' dry fly fishing. You can leave the rod and

line with which you have been practising at home, but first remember to unwind that portion of the line which has been previously wetted. Make it up in your hand (if you have no winder) into large loops; put your rod on the horizontal rests and hang up your winder, or put the loops of the line on the butt of your rod. A fishing-rod should always be supported in three places at least—near each end and the middle. We will take my own rod, which is all ready for use, with gut leader and fly attached. The first thing to be considered is whether we have everything we shall want, and if we are quite prepared for our fishing. Let us see. Are you well shod, with good serviceable watertight boots with plenty of nails? All right. Then, as you have your tobacco, pipe, and matches, and some sandwiches, never mind anything else to-day. I have all that is required—my creel, my net, etc. Your tweeds are a good colour, but you want a soft cap, as that straw hat of yours is too conspicuous. And now, while we are walking down to the lower end of our water, we can discuss the nature of the day's sport. We shall fish—that is, cast the fly—up-stream, which, except when fishing on still water, is essential for dry fly fishing. The dry fly must not be influenced by any motion of the line or rod after it has alighted, and by casting up-stream the fly floats down towards the fisherman, who steadily takes up the slack line as it comes back to him, either by the hand, the reel, or by raising the point of his rod, but in whichever way the slack line is raised off the water, it must not interfere with that portion of line and leader near the fly which must float easily and naturally down-stream, as

any drag or movement imparted to it will most certainly scare the ordinary trout.*

APPROACHING THE WATER

The dry fly fisherman, all circumstances being alike, is far less likely to be seen by the trout than is the wet fly fisherman, and consequently can take his sport more at his ease. For he of the *wet* fly who fishes up-stream has to use a shorter line and is consequently nearer the fish, while he who fishes down-stream is faced by the trout, and has to exercise the greatest caution in order to escape observation. Trout lie invariably with their heads pointed up-stream or against the current, and are in consequence looking away from the up-stream, but towards the down-stream, fisherman. Trout can see horizontally, from a point right ahead, to an angle of 150 degrees on either side in the plane in which they are lying, leaving an angle of about 60 degrees immediately behind the fish in which the fisherman may escape observation—*i. e.*, provided he is not perched too much over them when he is fishing outside this zone of safety, he must endeavour to be as near the surface of the water as possible. (See Chapter XII, p. 294.) This position of the trout, facing up-stream, is also an important advantage to the angler when fishing up-stream, for when striking, his hook will be pulled back into the mouth of the trout, instead of being pulled from or out of it.

* For full instruction as to the best method of gathering in the slack line when fishing out a dry fly cast, see page 145.

THE FLY AND THE RISE

As we are now approaching the stream, we will look at the water and see if anything is moving. By standing here and looking up-stream we shall not scare the fish, and in order to see if the trout are feeding we must look out for any unusual movement on the surface of the water, such as the ring or dimple made by a rising fish. No, there is nothing moving yet; it is perhaps a little too early or not quite warm enough to tempt the sub-imago—*i. e.*, the first flying state of various water insects—to leave their shelter on the banks of the stream, or, to impel the pupæ to come to the surface in order to enter their aerial life, and therefore, until some forms of insect life begin to move on or to the surface, the trout are not likely to rise to the surface to seek their food. In my creel is a small and light butterfly-net; it is ready for use in a few seconds, and by its aid I now catch that gnat-like insect floating on the water, look at it closely, it is a flying form of water insect life called the Blue Dun, the very fly the trout were taking yesterday. Look! There is another one on the water floating down; probably both are of a previous so-called hatch of the same fly. I will catch another to make certain. Watch how I do it. I slip the net into the water, just in the way of the down-stream floating fly, which floats into it. Here he is, clinging to the muslin. Now look at these two flies carefully. You can see at once that both are just like the Blue Dun fly on my line, which is one of the best-known flies on our eastern trout streams. If you fit this watchmaker's magnifying glass into your eye,

you will notice more distinctly the color and appearance of its delicate wings, its body, and its legs. A single watchmaker's glass is always a most useful adjunct to carry in your fishing bag, also a small butterfly-net.

Now we will see if there is any rise. No, there are no signs of a move yet, as the pupæ which will form to-day's hatch are possibly waiting—among the weeds, until the water becomes a little warmer, or is influenced by some meteorological change,—before rising to the surface, and therefore the trout have not been, as yet, excited by their upward movements.

We had better, therefore, continue our walk down to our starting-point at the lower end of our water. What! You saw a rise? Where? Oh, I see. That is not a trout, but a water rat. See him working his way upstream among the rushes and under the long grass of the bank. Notice how he makes a long slanting rippling line from the bank out into the stream, instead of the detached dimple or ring of a trout's rise.

The ring on the water made by the rise of a trout varies in size, from the most delicate circular dimple of the big fish feeding near the surface, to the splash and wave made by some small fish as he rises from the bottom, or jumps clean out of the water, in his eagerness to get the fly.

VISION OF TROUT

The eyes of the trout are so placed as to enable them to observe dangers, food, etc., which may be situated in, or approach them from directions in or above, the level in which they are lying, and this restricted range of

vision necessitates their remaining at or near the bottom of the water, when they are feeding on foods which are lying or drifting near the bed of their stream. As their foods begin to float upon or towards the surface, they naturally rise to a higher level in the water so as to feed with greater ease on this food.

When surface food is plentiful the trout will be noticed near the surface, but it is a mistake to imagine that the fish will not rise to a floating lure, because they are not visible—they may be feeding well toward the bottom, but quite prepared to rise with a rush if fortune sends them floating food, for which they have a preference.

We will now go on down-stream, keeping well away from the water, as we don't want to frighten the fish which may be coming on the feed. Trout, as I said before, lie with their heads up-stream, and their attention is thus directed to any food which may come floating down toward them either on or below the surface of the water; it is necessary, therefore, for the fisherman to find out what food they are taking, and then present this food to them in the most natural manner possible. The wet fly fisherman does this by *sinking* his flies below the surface, and the dry fly fisherman by throwing his fly up-stream and above the trout, and letting it float on the surface down-stream to the fish.

The living food, which the wet or dry fly fisherman has to imitate, in order to attract and secure the trout, are the various forms of water insects, either in their larval, sub-imago or imago state. The transition from the pupal to the sub-imago form is quite naturally, though errone-

ously, alluded to by most fishermen as "hatching." The water insect is hatched when it leaves the egg and enters the larval stage of its life; not when it undergoes the metamorphosis into the sub-imago, or imago, state.

There is but little difference in the appearance of a water insect when it is bursting its mask and entering into its sub-imago existence, and that of the sub-imago in a drowned condition, and it is therefore in these two conditions that the *wet* fly fisherman imitates its appearance and presents it to the trout, very often as a Hackle fly. But it is only when this water insect is in its living and flying sub-imago or imago condition that the *dry* fly fisherman copies its appearance.

Hence, you will readily understand that the latter has not only to use the more perfect and lifelike form of fly, but to present it poised naturally and in lifelike condition, on the surface of the water. The wet fly fisherman can, on the other hand, present flies to the trout either on or under the surface of the water, and in a far less advanced flying condition.

Now as the water is clear and the weather is warm, flying water insects will soon be numerous; consequently, the fish will be taking the dry fly, and therefore, we will first of all try our friend the Blue Dun, for two things are certain: That the fish were taking this fly yesterday, and also that some of these flies are already on the water and probably there will be an early hatch of the same kind before long. We have seen no rise, it is true, but we may be able to tempt a fish before the rise proper commences, and this is called "fishing the stream." When the rise commences we shall try for rising fish, and this is called "fishing the rise."

There is more experience and knowledge required when "fishing the stream" with a dry fly, than in "fishing the rise," and the former is perhaps the more successful method throughout a day; for while the rise may be uncertain and of brief duration, fish can be taken at all times, if a knowledge of the habitat and the habits of trout be possessed, by casting the fly to the most likely spots, and this even though the trout are not rising, in the strict sense of the term.

The dry fly fisherman should fish the rise when it is on, and fish the stream at all other times. It is impossible for anyone to see more than a limited extent of the water, even in his immediate vicinity, and innumerable rises may, therefore, escape his notice. Fish are not always feeding, and even when feeding are by no means always rising to the surface. It follows, therefore, that if a fly is cast to all likely places—while not omitting at the same time to keep a sharp look-out for rising fish—trout will be taken whose rise has not been seen, or who may not have felt inclined to rise before seeing the angler's fly.

We have now reached our starting-point, and before commencing we will carefully examine our tackle. First let me caution you against laying the rod on the ground, as this is always dangerous; for even if you should never tread on it yourself, someone else might possibly do so. If you have a spear—which can be always fitted into the butt-end of the rod—press it firmly but delicately into a soft tuft of grass; the rod will thus stand upright and you have both hands at liberty. And now, as the rod is standing up out of any danger, we must look carefully

at the gut leader and at the fly, and see that they are in good order. Everything being all right, we render the fly as buoyant as possible, by applying some odourless paraffin-oil.

The most convenient form and the cleanest and best method of carrying the oil, necessary for this purpose, is in a small box such as that which I have in my hand. The box shuts tightly and opens with a spring. Inside is a small pad of woollen felt, which should be saturated with Usoline before leaving home. The fly is pressed down by the finger on to this saturated pad, taking care not to injure the wings, and a little of the oil held in the pad is thereupon transferred to the fly.

I certainly advise you to apply some grease to the line, if not to the leader. As regards the latter, I am by no means forgetting a prevalent idea, that a floating leader may put the trout down. I do not think that a good and carefully prepared gut leader will suffer from the application of any pure fatty substance. In very clear water on a fine day, a floating leader will produce more shadow than when submerged, and on a well-fished and shallow stream, the more defined the shadow cast, the more likely is it to scare the trout; but in other ways I have noticed the advantage which a floating leader possesses—If the leader sinks, it has a tendency to drown the fly, whereas, if it floats, it cannot pull the fly down (see p. 177)—and for this, if for no other reason, I take care that it is sufficiently greased to float on the surface, but when cast it should lie in a straight and partially submerged condition, on the surface of the water.

FISHING THE STREAM

You will notice there are one or two more Blue Duns coming down, but no signs of a trout, and as we have plenty of water ahead, we will try and tempt the fish to rise to our fly. Now, this is where experience and stream lore are so necessary. Although brook and brown trout alter their position, they seldom go far from their own particular retreat, yet the wind, the time of day, the heat or cold, the clear or thick state of the water, considerably affect their movements.

The most successful fisherman is he who has, from former experience, a knowledge of just where a trout is likely to be lying, and also what the trout is likely to be thinking about when there. So now, with no fish in sight—*i. e.*, rising—I yet feel confident that there ought to be a decent fish just at the lower side of the opening between those rocks, also that he is thinking about food, and that on this occasion it might be floating insect food. I shall try, therefore, to place my fly about two feet above the opening, so that it will float down to where I think the trout is waiting. It is a nice easy cast of about fifteen yards right up-stream; the breeze is also up-stream, and therefore in our favour.

You will notice that I get my correct length of line by trial casting in the air not over the fish, which might scare him, but by casting in the air to one side or the other. I have now about the right length and so, turning toward the anticipated position of the fish, I cast my fly. Now watch! There! The fly has fallen just in the right place. See, the wings are beautifully cocked, and the fly

is sailing down between the rocks, and as it does so I take in the slack of the line as it comes back to me. There! Tut! tut! I have missed him as he rose. Of course, I don't blame myself—fishermen rarely do so. I think, or say I think, that the trout came rather short; but one thing is certain—he came at my fly. I flick my line backward and forward in the air twice, and my fly is quite dry again, so I will try once more. There! just as before: the fly floated down beautifully, but I missed him again. (See episode of the Dry Fly on the Beaver-kill, p. 195.)

STRIKING

While still emphasizing the importance of striking immediately the fish rises, it is advisable to warn you that there are some occasions when it may be better to vary such a practice. At the beginning of the rise of the May fly, for instance, the trout and other fish appear to be somewhat shy of gulping flying insect food presented to them on a scale, comparatively speaking, larger than that of the ordinary flying insects upon which they feed, and instead of taking the new food boldly into the mouth they take hold of a part only of the fly, for the purpose, I think, of dragging it under water and investigating its character. If, then, at the beginning of a rise of May fly, or of any other large flying insect, you fail to hook the fish you strike at, you will probably find it worth your while, before striking, to give the trout time enough to shift his grip from what may be only the wing of the fly which has been presented to him.

The failure to hook a rising fish, then, may be due, first

of all, to striking in a tardy or slow manner, and secondly, on rare occasions, to striking too quickly.

A well-known authority on the entomology of trout streams has declared, that in a May fly rise the numerals up to three should be repeated aloud after the trout has seized the fly, and before the strike is made. Any such dictum must of course be regarded as controvertible, however successful it may be under circumstances such as those mentioned above, or when the trout are "coming short," and "playing with" or "drowning" your fly.

As a general rule the strike should be made as the trout rises at the fly, for the fish, after taking the fly, will often turn down-stream, then round, and up-stream again to his original position, and the strike, if delayed, may pull the fly out of the mouth of the fish as it faces down-stream and toward the fisherman. One of the best of old time British fishermen, "Francis Francis," says:—"As to giving any direct rules when to strike, they would be of little avail, as sometimes fish rise quickly, and take quickly, sometimes with more circumspection, and sometimes altogether falsely. Practice alone will teach the angler what to do, and how and when to do it, and all arguments about it are mere waste of time."—A Book on Angling, 1885.

The big trout will reject a fly just as quickly as the small one, but the little trout is more likely to play with, to come short, or to wish to "drown" a fly than the former, and therefore at each rise there should, as a rule, be no delay in striking; but, if the immediate strike proves abortive, then—and not till then—can a more

dilatory manner of striking be experimented with. When fishing with the natural stone fly, unless the fish are rising furiously, it is better to pause for the fraction of a second in order that the fly, which may have been only partly seized, may be taken completely into the mouth of the trout. A natural fly, if properly attached to the hook, is less likely to be rejected than is the artificial, and the pause I now suggest is not likely to result in the rejection of a natural fly if it be only partially taken into the mouth of the fish, but will lead to a more complete seizure.

A pause before striking, however, is here worth trying, so that at the next rise we had better not strike until one second has elapsed. Now I dry my fly once more and cast again. There! he is rising—now I strike—with no greater success than before. I will try him just once again—after a longer pause—but with no luck!

We will now give this trout a rest, and try somewhere else; as the fish are not on the shallows yet, let us try the opposite side of the stream just by the bank. The water is deep and dark, and if one is there he will be a big one. You see that I now stoop well down, as much out of sight as possible, when I cast, because from here I am more noticeable to the fish opposite, than to the one we have just missed. (See "Vision of Trout," p. 296.) I have three tries, but no luck. If one is there he is not to be tempted. We will try our first friend again. I can stand upright again, being almost directly behind him.

I dry my line and fly by three preliminary switches, and again the fly alights just above the opening and floats down, but this time I get no notice at all from the

trout. Once more—failure again! Well, as I don't like to leave a rising fish, we will try another fly, and this time one of a warmer tint.

CHANGING THE FLY

Often it is a good plan, when the fish have not started really feeding on the fly of yesterday, to try a fly with red hackles. So you see this fly in my cap, that I am going to use; it is called the Red Quill. It is almost impossible to overrate the importance of red, as a colour, in the make-up of lures, either for fresh or salt water—or for small or large fish—or for bait or fly casting. It is the oldest and favourite colour used in lures for fishing purposes, and if the experience of the majority of fishermen I have known carries any weight, then, at least one fly, on the leader of every wet fly fisherman, should be noticeably reddish. If an uncertainty prevails in the mind of the Dry Fly man as to the fly he should use, he would be unwise if he did not try one fly with red hackle, if not with a modified reddish body. (See Chapter on Flies.) The Red Quill has double starling wings, red hackle, and quill body. You see these small but sharp scissors in my knife, which I have secured by a chain and keep in my right-hand coat pocket; I snip off the gut with them close to the eye of the hook, cutting the knot if possible, and, after clearing out the gut from the eye of the hook with the pricker in the knife, stick the fly into my cap, just where you see two or three more flies of the same colour. I place the end of the leader in my mouth, to soften, while I detach the Red Quill, by taking it firmly between the finger and thumb,

and by working it gently, it readily comes free from the rough material of my cap. I now slip the end of the softened leader through the eye of the fly, passing it round the gut above the eye in an overhand knot. I then draw this knot taut, and by pulling on the leader bring this overhand knot close to the eye of the fly. I have used as small an end as possible, which I now cut off.* The Red Quill fly must be oiled and we are now ready again. The scissors of the knife are now closed, it and the oil box are placed in my pocket, and I take the rod, get my length, and cast again. Now watch!

NETTING THE FISH

There! He has risen, you see, and by a slight upward movement of my hand I have hooked the trout, and before he has time to realize what is the matter I have drawn him below and away from the dangerous vicinity of the ticks. See! how he fights to get back to his retreat, but it is no good. Now he is trying to bore down into that dark hole on the further side of the stream; there may be danger there, so I keep him well up. I have plenty of water, and by a firm but gentle opposition I check every rush he makes, keeping my rod well up, and finally bring my prize well below the unfished water. My left hand is winding up the reel, and the ever-shortening line is bringing him nearer and nearer. Note the end of the rod; it is well up, and the bend is nearly always the same, for the line must never be slack after the fish is hooked, and the necessary strain is achieved by the delicacy of the grip of the hand which

* For further particulars of this and other kinds of knots, see Chapters VII and XVI.

holds the rod. By careful play I have at last beaten him, and the line has been shortened enough to make the landing-net available, so my left hand leaves the reel and steals to the net which is extended and then, stooping, I bring the rod point well back and steer the fish slowly towards the net, which you see I hold diagonally, well under the water, keeping it quite stationary until the trout is above it. Then, by a steady lift of the net, I have the beauty secure, and carry him up the bank. It is a good fish and well above the size limit, so it will go into the creel.

My rod is safe, and my disengaged right hand grasps the fish below the gills, the thumb and forefinger seeking the gill opening, leaving my left to kill and unhook my fish. Notice how well hooked he is—fairly back in the lower part of the tongue. Here again let me remind you of the advantage in the dry fly method. As you now know, the fish takes the fly, whether fished wet or dry, as he sees it coming toward him from up-stream; when, therefore, you are fishing below him, the hook, as a natural consequence of the strike, is pulled into his jaw, as in this case, instead of being jerked out of his mouth, as when fishing above him, and this shows that the chance of hooking a rising fish by the dry fly up-stream method is much greater than when wet fly fishing down-stream.

KILLING THE TROUT

But how are we to kill it? When a trout exceeds half a pound, the cleanest and most merciful method of administering the *coup de grâce* is to give it a smart tap

on the top of the head. For this purpose a "priest" is usually carried. My priest forms the lower end of my small fly net. Here it is, its end conveniently protruding from my creel. One smart tap and the fish is hors de combat, and so we can take the fly out of its mouth and drop the fish into the creel.

To do this, I therefore open the file (for sharpening the points of flies, etc.) contained in my knife, the end of the file being a disgorger having a lancet face on the lower side; with this I lance the tongue, and by a gentle pressure of this disgorger on the bend of the hook, the gut being held tight by the forefinger on the file, I instantly free the hook without injuring the wings of the fly by any rough pressure, etc.

It is, however, more or less soiled by the slime from the trout's mouth, so I cast it down-stream and pull it through the water once or twice, and thus wash it. A few flicks overhead, and it is once more dry and fit for work.

It will be advisable to say a few words here as to the correct method of netting a fish.

A fish should always be regarded as being lightly hooked, and the greatest caution should always be shown in playing him until he is safely inside your landing net, the object being—first to tire him, and then at the critical moment, when he has exhausted himself, and before he has time to recover, to draw him quietly into the net. The fisherman should show himself as little as possible, and keep the net, when it is extended, well below the surface of the water until the fish is over it.

I was lucky enough to be able to take some photo-



FIG. 1. Netting a fish. The first attempt fails as the rod is not held sufficiently back and the fisherman cannot bring his fish over his net.

FIG. 2. The fish is scared and bolts upstream.



FIG. 3. A jump is made to a rock and the fish again brought to the net.

FIG. 4. This time the rod is held well back and the fish easily netted.



graphs of a friend of mine when playing and landing a trout. You will notice in Figs. 1 and 2, Plate VI, that my friend is standing on a large rock, and that he has hooked a fish. Thinking he had tired his fish out, he attempted to land it without drawing his rod sufficiently back over his shoulder, and, although it will be seen that he has knelt down and extended his net as far as possible, he has failed to draw the fish within reach, and has only succeeded in frightening it into another run for freedom. Luckily it was well hooked, and my friend, by jumping from the big rock on to the smaller one (see Figs. 3 and 4, Plate VI), and altering his method by bringing his rod back well over his shoulder, has been able to draw the fish within easy reach and finally netting it.

We will now try the bank again on the further side. There is still no rise, but a fish, and a good one, should be there. Take the rod in your hand, keep as low as you can, and try a cast.

Don't be nervous. Imagine that you are casting your fly on the lawn, and look at the water where you wish to cast—close by that root on the other side—and take plenty of time. It is not a matter of life and death, and if you do make a bad cast and frighten the fish, there are plenty more just above. Steady! You are forgetting your lessons in the excitement of the moment; you made your forward cast too soon, before your line had straightened itself behind you, and the fly has fallen but half-way to the spot you wished to reach. Try again. Dry the fly well, and let your pause be longer after you have switched the fly back—so—pause. Now cast. Well

done! A good straight line, and the fly has fallen lightly. Let your left hand fall at once on the reel, and as the line comes back with the stream, reel up for a bit. Keep your rod well down. Don't let your hand leave the reel; take in more slack as the line comes still further back. Look out! Strike! Steady! You have him! Bring him out from the bank and down-stream. Dear! dear! By dropping the point of your rod, you slackened your line and you have allowed him to get into the weeds. Keep a steady strain on the rod; luckily he is only in the lower end of the weeds, and we shall perhaps get him out as he is beginning to struggle! Steady and firm. There he comes! He is free again, and exhausted. Reel in with your left hand—easy; let him go a little if he makes a rush, and then reel in again. Keep at him. Keep the point of your rod higher. That's better. I have the net all ready; bring him in slowly and quietly toward it.

There, I have him for you, and have given him the *coup de grâce*. Quite a beauty. Well done! Your first fish and eleven ounces if he is a pennyweight. The barb is in his lip and we do not want a disgorged. It is soon out of his mouth, and we will now weigh him. Thirteen ounces. Quite a good fish.

Now remember this axiom: "Never take your eye off the fly when it is on the water." In this case, you took your eye away from the fish when it was hooked, in order to guide your hand to the reel, and you dropped the point of the rod and slackened the line, and, as a consequence, the fish got into the weeds.

A TAUT LINE

A sporting wish to a person about to fish is, that he may have a "taut" or a "tight" line, and this wish may be supplemented by the hope that he may keep it so.

A tight line is a necessity after any fish is hooked and until the fish is safely creeled, and for the following reason—the barb of the hook does not in many instances penetrate the fleshy part of the trout's mouth, the point being merely fixed in the skin or bone of its jaw, etc. When a fish is hooked, it naturally endeavours to extricate the hook which is galling its mouth and depriving it of its freedom, and for this purpose it employs its tongue to displace the fly when the hook is not firmly in the flesh. So long, therefore, as a strain is kept on the line—that is as long as the rod point is kept well up and the line taut between it and the fish, its endeavours thus to obtain its freedom are frustrated. It is only when a momentary slackening of the line occurs through the rod point being lowered, or the slack of the line not being taken in with sufficient speed, as the fish runs toward the fisherman, that this opportunity occurs and, if the fish is not securely hooked, it will probably dislodge the hook, and escape. It will be frequently noticed, after a fish is safely netted, that the fly has left the mouth; the reason being, of course, that the first slackening of the line which has occurred since it was hooked has been after the fish was in the net, the fish being then able to extricate the hook. When you dropped your rod point just now, the trout, not being able to free its mouth of the

hook, was yet nearly successful in gaining its freedom, by being able to get into the weeds.

On page 209 of Mr. Halford's latest work, he suggests that when a fish is hooked among weeds the line should be slackened, "in order that the trout may not be frightened into the weeds surrounding him," and the illustration between a trout and a driven pig is then used. This simile is not a good one, however, because while the driver can afford to slacken the line holding the pig—it being securely fastened, so that if piggy goes the wrong way he can be hauled back—the fisherman cannot afford to slacken his line, because it is not fastened to the trout, and, in two cases out of five, a slack line will mean losing the fish, either because it permits the fish to free itself, or to bore, still further, into the weeds.

In order to keep these trout—we have caught—and your creel or fishing bag sweet, it is a very good plan, if you have no dry hay, to gather a few leaves of the wild thyme or mint which you see growing by the water side, and put them with the trout; it abates the fly nuisance. If you wish to send your fish to your friends, the best packing is something which is dry—dry hay for choice—and always remember that the creel or fish-bag should invariably be well washed and hung up to dry, every night, when the trout are taken out.

THE RISE AND ITS ADVANTAGES

While you have been creeling your fish you did not see that rise just above. Look! Ah! You saw it that time, and now you know what you have to look out for, when I tell you to watch for a rise.

Now a few words as to the rise. It does not follow that the commotion caused by a rise bears any relative proportion to the size of the fish making it, and "the bigger the fish the more gentle the rise" is almost an axiom. The reasons for this are simple. The dignified assurance with which a big trout rises at a floating fly is due, not only to his greater experience, but to the fact that he is more often near the surface in the deeper and more slowly running portions of the stream; and the floating fly therefore comes into his ken and towards his station slowly, and permits of a well-regulated and leisurely approach.

His smaller brother, on the other hand, is more often found in the shallow and rapidly running portions of the stream; hence, not only from the greater rapidity with which a floating fly will travel, from the uncertainty of a lesser experience, and possibly from having a keener appetite, he will be galvanised into a more impulsive action when taking the fly. This rush will of necessity disturb the surface more, and may make it appear a more important rise, than will the self-controlled action of the older or bigger fish.

See there again, under the bank in the deep water, about thirty yards higher up. Just a dimple, no more. As there are no Red Quill on the water, we will now go back to the Blue Dun. We can dispense with the butterfly-net, which is closed in three seconds, and placed in the fishing-creel ready for use when required.

FISHING THE RISE

We can now, while not neglecting to cast our fly to all likely haunts, "Fish the Rise," for we know where certain feeding fish are by these rises, and also which fly they are apparently taking. But there is still a pleasant necessity to bring experience and knowledge to bear, in order to determine the probable position of the non-rising trout; though otherwise we have only to notice the rise, and try for rising fish.

There's a rise again by our bank just ahead. You can locate the exact place of the rise, which is three feet from the bank, just opposite that sedge. This is important, for if you do not take some landmark as a guide, your eye will follow the ripple as it comes down with the stream, and you will probably place your fly, when you cast, below the actual position of the fish.

When a trout has risen, the sooner the fly is placed on the water above him, the better. His appetite has just been whetted by a tasty morsel—he has probably not yet turned to his former position, and the swirl of the water, his own motion, and the alteration of his position, will probably prevent a too analytical scrutiny of the line and fly you present to him.

Take the rod, and when you have found the distance, cast the fly lightly, just two feet above the position we have marked by the sedge. No! no! What a mess you have made of it! You are again forgetting your lessons in your eagerness, and have smashed your line on the water, and put the fish down. In making your forward cast, instead of finishing the effort at a point when your

forearm was level with the elbow, and the rod inclined at an angle of about twenty-two degrees above the horizon, and then lowering your rod as the line travelled forward, you brought your hand forward before the line had extended itself behind you, and made the *accelerando* motion of your rod right down almost to the water, and consequently the direction of your line was downward instead of horizontal. It's no good trying for that fish again! Try for the one in the middle that has just risen. You will, by making the forward downward action of the rod from the vertical position, project your line horizontally, so that your fly will fall on the water about two feet above the position at which the trout rose. Good! That was a good cast, but let the fly get well below the place where the fish rose, before lifting the line from the water. A trout will at times let a fly on the surface pass, and then turn and follow it down-stream; and even if the fish does not then take the fly, he would be scared by your lifting your line too soon. Now lift your rod and make another cast. That one is better.

Now look out! Strike! You were too late, and too forcible. It only requires a small upward movement of the forearm and hand to hook the fish so long as your line is straight. Just wait a minute, and give him a rest while you listen to me. The strike depends a great deal on a person's temperament. Some men are always slow, and others equally quick. An immediate strike at a rise will become a habit after a time, but there is always the personal equation which dominates the rapidity of the individual action. The health and condition of the mind and body will also affect even the most experienced fish-

erman; an alert, nervous temperament and a straight line are the best factors to ensure success. You will gradually become more proficient in striking when you have had further practice. Raise the rod point, that is all you have to do.

STRIKING DISCUSSED

If a strike is made when the hand is off the reel and the line is not held in either hand, but runs untouched from the reel to the fly, then the angler is said to have struck from the reel.

In Dry Fly fishing, the art of striking firmly and gently is of the greatest importance. Very little weight can be lifted by an ordinary trout rod, and the strength of the end point of your gut leader will determine what force may be used when striking. Little as may be the pull, however, which the gut can stand, it sometimes happens that the hold of the hook in the mouth of the trout is considerably less. Consequently, for the man whose hand is heavy, striking from the reel is recommended, always provided that the check of the drum and its inertia is not greater than the force applied to the fly. With even a slightly resisting check, the pull will be sufficient to drive the hook home into the softer parts of the mouth of the trout. The disadvantage, however, of striking from the reel is that the line is nearly always lengthened, and at a moment when it should, if possible, be shortened. The trout rises at the fly; the strike is made from the reel, and the impetus and pull thus given to the reel are sufficient to unwind from one to three feet, if not more, of the line. As the trout very frequently comes down-stream towards the angler the moment he

feels the hook, the amount of line thus drawn off the reel is an additional tax on the capability of the fisherman to reel up the slack line sufficiently fast to keep a strain on his fish.

The breaking tension of a line must be estimated solely by the strength of its weakest part, and the weakest portion of a fisherman's line is, or should be, the fine end point of his leader. Now, although this gut point may be strong enough to check the rush of the fish, and although the reel, once its inertia is overcome, should not in itself present sufficient resistance to cause a break when striking, yet it must be remembered that, not only has the inertia of the drum of the reel to be overcome, but that the pawl, by which the ratchet wheel of the drum is controlled, presents a far greater resistance to the rotatory action of the drum *as the latter starts* to revolve, than it does when once the reel is revolving. The quicker the rotatory action of the drum, the less is the resistance offered by the pawl to its revolutions. As a consequence when a fisherman strikes at a rising fish from the reel, he invariably brings at that moment a greater strain on the line than that which occurs while playing his fish, the result frequently being that the gut breaks and the fly is left in the mouth of the trout. This parting of the gut, which, in a level fight with the trout, *appears* capable of resisting a far greater strain than the effort used in striking, is regarded as inexplicable by many fishermen, and it is almost better therefore, when using the modern reel, not to strike from the reel, but to hold the line lightly between the finger and thumb of the left hand.

KEEP YOUR EYE ON THE FLY

You must give your absolute and undivided attention to your floating fly. Every angler knows how many chances of striking a good fish have been lost by a momentary lapse from this vigil. The one rise of a heavy fish at your fly may be unseen and the fly rejected, during the momentary glance aside at the opalescent gleam of a kingfisher, the metallic brilliance of a dragon-fly, a cluster of wild roses, or at any of the thousand delights of the trout stream. It is, however, only when your fly is on the water that this vigilance is imperative, and the fisherman has practically every other moment of the long and delicious summer day in which to enjoy his surroundings. No patience is required in observing this pleasing vigilance. The fascinating expectation of an answering rise to your scientific and delicate cast will be as strong and inspiring during the final minutes of your day's fishing as it was during the moment of your first cast. It is this absorbing pleasure of watching your fly, and looking for and anticipating immediate action, during the whole length of an inning, lasting practically from morning till night, which constitutes one of the principal charms of dry fly fishing, and places it far above wet fly fishing down-stream, or, in my opinion, any other sport.

The difference between the two methods, fishing a dry fly and fishing a wet fly, may be compared to the intellectual pleasure and anticipation of the sportsman, during every moment of a long and arduous day in September, when shooting over well-trained pointers or setters,

and the jaded indifference of the gunner who, without his dogs, strides along, with his principal sense, sight—after the first few hours—used solely to keep him in line—if shooting with other men—or out of ditches, etc., and who is suddenly aroused and jerked back to the realities of life, by the nerve-jarring rush of the birds he has chanced to flush.

A FIGHTING FISH

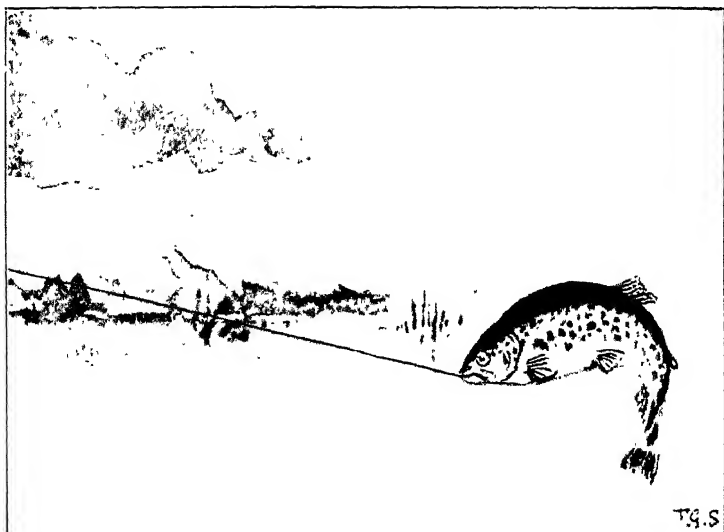
Now watch me carefully once more. The fish you put down is again rising, and I am going to try for the big fellow right under the bank. He has shifted in quite close, so I shall hit that grass above him with my fly, and let it fall into the water and float down quite close to the edge. See, I have done so, and there it comes, now sailing outward with a little sweep, and now sidling quite close in to the bank and almost stationary. There! what did I tell you? I have him, and this time I am into a good fish. You noticed how I dropped the point of my rod when he jumped? There he goes again. What a fighter! Now he is going for those weeds down-stream. Observe the tug of war as I check him. He has the stream to help him, but I must hold him up, for if he gets into the weeds we shall lose him for a certainty. I have beaten him, I think. No, not I. Look how he clears the water and goes again to the bank. He's all right there, for you can see that the bottom is gravel and there are no weeds or snags. Now to get in a little line. Steady does it. No, he is off again down to the weeds. How the reel screams! and the rod—look at it—bent nearly double. I have still all my work to do to keep

him from those weeds. Ah! he is beaten at last, and now I can get some of the line in on the reel, as I follow him down-stream. A little more—that's it; now take this landing-net, crouch down, as much out of sight as you can, and hold the net slanting well in the water, between the trout and myself. I shall draw him over and into it, and when I say "Lift," do so with both hands. "Lift!" Well done! Now bring him up the bank, and let's have a look at him. What a beauty! a Brown Trout "*Salmo Fario*." Are not these crimson spots lovely? I smite him well back on the head with my priest again. Notice how well this Blue Dun had him. We will weigh him; and see, he is just over one-and-a-half pounds, and in good condition. We will put him with the others, but first add a few more leaves of thyme as a fitting tribute to his prowess, and while we fill our pipes I will give you a hint as to your best action when dealing with a jumping fish. Before doing so, I will just drift my fly in the water, to wash off the slime, and then press it with my handkerchief and let it dry.

A JUMPING FISH

The reason I twice lowered the point of my rod, when the fish jumped, was in order to slacken the line.

You will often see a good fighting trout throw himself out of the water in his efforts to escape. Frequently this is a deliberate attempt to break the line by a blow of his tail. The general practice is to drop the point of the rod instantly, but I consider that this is not always the soundest policy. You should, in this respect, be influenced by the direction in which a fish is moving when



A JUMPING FISH

Rod up. Keep firm but gentle strain on fish



A JUMPING FISH

Lower the point of rod

he breaks water. If the fish springs straight up in the air, or in any direction away from you, then lower your rod immediately. If, however, as sometimes happens (it has to me on several occasions), the fish is heading more or less toward you at the time he leaves the water, you should continue to keep the line fairly taut, as this slight strain will keep the head of the fish toward you and prevent his tail coming forward and striking against your line; it will also prevent the fly loosening in his mouth, but if ever a delicate hold on the rod be required, it is just at such a moment.

In Plate XIII, a taut line will keep his head toward you, the hook fast in his mouth, and the line clear of his tail.

In Plate XIV, by slackening the line at once, the fish will very probably get no purchase if his tail does strike it, while the weight of the line will keep the hook embedded in his mouth as the fish moves away from you.

In both cases just now, as you could see, the trout was heading away from me and up-stream, so I promptly lowered my rod and kept my line clear of his tail. The lowering of the point of the rod when the fish is heading as in Plate XVIII may be just as dangerous as not lowering the point when the fish is in such a position as Plate XIV and for the following reason: Lowering the rod slackens the line and releases the strain on the hook—a most risky proceeding, for if the fish happens to be lightly hooked on some bony portion of the mouth, the toothed tongue of the trout, which is constantly endeavouring to shift the fly when in its mouth, will at once get the opportunity it requires, and the fly will be

rubbed or torn away from its hold. This latter position, however, is the more common one, and always lowering the rod is better than always keeping it up. The best advice I can give is always to lower the point when there is a probability of the fish striking the line with his tail; but it must be evident that if the trout, as in Plate III, is likely to throw a somersault, so as to bring its tail down between its head and the fisherman, this somersault will be all the more easily executed if the line is slackened.

By this time the fly is dry, and we will just touch it with a little oil. We must go up-stream a bit, as our big fight has put down the fish here for a time. There, you saw the rise. A feeding fish just ahead and close to our own bank! Get well down to the water and use a shorter line, and you should get him. That's low enough. Remember the grass and bushes behind you; make certain to throw your fly well above the fish, and don't lift it too soon; let it float well down behind the fish before you make your next back cast. Yes, that's right; you threw your fly well, but the fish did not rise, so wait a minute *while I talk* to you.

With regard to taking in the slack line, you should either gather in your line with your left hand, as it comes back to you on the water, or else reel it in; in both cases keeping the point of the rod *down*, the whole time. It really means this—that if you are casting to a special rising fish, it is not necessary to let your fly come down more than six or eight feet below the spot at which it rises, and consequently you can take up all the line that is required, in one outward movement of the left

hand, then make your cast over again to the same fish, "shooting" the line you have taken in by the hand.

When you are fishing the stream use only a moderate length of line; keep well out of sight of any fish which may be lying within the radius of your cast, and do not try for a non-rising fish—at a distance—before searching the intermediate water. Let your fly float down-stream for about ten feet after each cast, for this will not necessitate your reeling up. Should you, however, decide to make longer distance casts, and let your fly float down-stream on the water for a greater distance, reel up your line at first, and then gather in with the left hand as before, ere you make your fresh cast.

Now the same fish has risen again, so make a fresh cast; don't take your eye off the fly, keep your rod point down, and gather in the line as the fly comes back toward you. Now the fly has passed the spot where the trout rose, and as the fish may follow the fly down-stream, keep it on the water. Don't take your eye off the fly. Strike! You have him! Reel up and bring him down, and keep him well away from the bank at your feet; don't let him come in under you, if you can help it. He's a small fish, but plucky. Well done! Here's the landing net; you must net him yourself.

Your line is yet too long, so reel up a little—not too much, or you will be unable to bring your rod backward over your shoulder; now you can bring it backward, drawing your fish over your net, and as you do so, lift your net and he is yours.

A NON-KILLABLE AGE

Well done again; but, you see, as he is only just over the limit, and as it is always better to err on the right than on the wrong side, I think we will put him back, and he will have a chance to grow into a bigger fish.

THE BROKEN HOOK

I should like you to try that rise on the other side. Keep well down and see that your fly is clean and dry before casting. Why, you have risen two fish and touched them both! Allow me to look at that fly. Ah! I thought so. Now feel the point of your hook and you will find that it has lost its sharp point, perhaps from having been carelessly taken out of the last fish, or maybe from catching it in that bough a minute ago.

The fine splitting file on the disgorger in my knife now becomes useful. Two or three applications of the file to the point of the hook, and it has as fine a needle point as ever. It does not take more than five seconds to sharpen the point of a hook. It renews the usefulness of the fly, and saves time; therefore, always carry a file or hone, as it may be that later in the day the hook of your last taking fly will become blunted, and if you have no file you will most likely lose fish and spoil the rest of your day's sport.

Now fish up that run, beginning where you saw the rise in the pool below it. Cast your fly just where the rush of the stream begins to lessen, and let it float well down. Strike. Well done! Bring the fish down into the pool, so as not to frighten the others in the stream

above. Keep him out of that dark deep bend, where the bushes dip into the stream. That's right: don't touch your net until you have beaten him. Shorten your line a bit more, and now use your net; stoop down as much as you can, so as to keep out of sight, not only of the fish on your line, but of others which may have followed him down. Well done! Give me the fish and dry your fly again, and try the run, right up, from where you caught your last. Never mind looking for a rise: there are sure to be fish there. Well done again! and a good one, but you struck with your arm and shoulder, and have broken your leader. Now quickly: we must not lose time while the fish are taking so freely. Let me see your leader. Yes, you have broken off the lower point, so I place about two inches of the end of the leader in my mouth to soften. You see this cast-box; it has some slightly moist white flannel in one compartment, in which have been lying a spare cast, and some fine points. I take out a point, look at it with my watch-maker's glass in my eye. Yes, it is all right—smooth and free from glints. So making an overhand knot in the end of this point, I remove the broken end out of my mouth, run it through the overhand knot, and make another knot of the same kind in the end of it, *only enclosing the gut point in this knot.** I draw both overhand knots firmly but *completely* taut. Each knot now encloses the gut which has formed the other knot. I draw the two knots firmly together by pulling the leader and the point, and, taking out my knife, I open the scissors and snip off each end fairly close. Place this quite

* See Chapter IX.

new Blue Dun, which I have taken out of my fly-box, on the end of the point, and oil it carefully.

THE FLY-RETRIEVER

Now continue to fish the run right up beyond the ripple at its head. Stop! You have caught your fly in these overhanging branches. Do not attempt to jerk or forcibly pull it clear. Drag it very gently and steadily toward you. In most cases a fly will come clear by a very gentle pull, but if it catches while thus pulling it, it may be only in a leaf, therefore point your rod directly towards it and increase the strength of the pull. If it still refuses to budge, and you can reach the twig with the point of the rod, if you have no fly-retriever with you, reel right up until the point of the rod touches the fly, and then gently twist the rod round to the right or left. This very frequently liberates the fly, but force must not be used. If you cannot reach the fly, pull on the line, still pointing the rod towards the fly, until the fly either tears itself away or the weakest portion of your gut parts. You may probably lose your fly, but you have no alternative. It is inadvisable to climb a tree in waders. They suffer at times, and a particularly cold and unpleasant reminder of this fact will follow your re-entering the water.

I have, however, in my creel a most excellent fly-retriever. I place this on the end of my rod, and fix the blades above and across the twig on which the fly has caught. When the blade is in position, I extract the rod point, and by a light pull on the line attached to the

fly-retriever, I bring the fly fluttering down with the twig on which it was held.

A BIG FISH

Start again at the bottom of the run. Ah, I thought so! You are into a big one this time. Reel up! reel up! Walk back, man! Keep your point up and line taut, or you will lose him. Keep him out of the dark corner "an you love me." Steady! drop your point if he leaves the water as he goes up-stream again. There! you have him at last, after a splendid fight. Why, you have beaten my fish. Let us see! One pound nine ounces, and in every respect a beauty. If you take my advice you will send him, in ice, by this night's train to a taxidermist. Your first big fish is always remembered with the greatest pleasure, and, if set up, is a trophy of which you will always be proud.

A WRINKLE

And now, I will show you yet another way of taking a trout, before I go home. You can see that not a fish is moving; everything is baking hot. The sub-imago is sheltering amid the grass, and the pupa amid the weeds; both dislike this bright and torrid glare, and while the former is not yet ready for his joyous but very brief honeymoon existence, the latter is clinging to his wavy and shadowy retreat, and waiting for the impulse which is to send him, despite all dangers, jiggling up towards the surface to loosen the wings which are fretting within his mask.

Do you see that deep hole, right up-stream, where the

water glides smoothly by that sun-smitten rock! Well, I am certain that there is at least one trout in its shade, and therefore, I am going to throw my fly on the rock, and then slowly pull it until it drops off into the deep water. Watch! There, I made no splash with my line, and my fly has alighted just on the edge of the rock, and well in sight of any fish which may be lurking in the cool and shadowy depths below. See, I pull it gently, it slides down the rock, tumbles into the water, and floats lightly down-stream. Ha! a rise and a little ring spreads out, and dies away. The fly has gone! It is a good fish, and I have him. See how he bores down; he has some retreat, possibly a hole at the base of the rock, but out he has to come, and, finally, after a stubborn fight, he too goes into my creel. Now take the rod, as I must be getting home. Shorten up the line. No, you are winding the line up too carelessly. Always wind a line firmly on the reel, or you will perhaps, at a critical moment, be in difficulties owing to the line over-running itself. That's better! The next two or three hours' fishing will be poor; therefore, fish the rise if you see one, but also try all the places in which you think it is possible that fish may be lying. Change your fly if the rising fish neglect the one you are now using.

CHAPTER VII

FISHING TOPICS DISCUSSED DURING LUNCHEON

World Wide Value of the Dry Fly—The Dry and Wet Fly Methods—Rising Water—Leaping Fish—Shooting and Manipulating Line—Striking—Handlining—Handling Trout in Weeds—Left Hand for the Reel—Undersized Fish—Suggestions for Improving our Trout Fishing—Handling Trout—Takable Trout—Weight Limit—The Spring Fisherman—The Ultima Thule of the Spring Fisherman—Floating and Submerged Leaders—Remedy for Same—Golden Hours—The Evening Carnival—Evening Fishing—Fly Fishing at Night—By Moonlight—The Fears and Joys of Fishing—Dry Fly Fishing versus Golf—The Possible versus the Probable in Fishing—Weeds—Fungus—Selection of Fancy Flies—The Cap as Fly Holder—Dry Fly Fishing with Three Flies—Moths—Otters—Bulging Trout—Hints for Night Fishing—The Trout are Rising—A “Beaverkill” Sketch.

AS the rise has now ceased and the sun is very hot, we may as well take our luncheon in the shade of this Willow, where we can watch the water, and resume our chat on fishing topics.

WORLD WIDE VALUE OF THE DRY FLY

After fishing experiences embracing nearly every portion of both hemispheres, I am confident that the dry fly can be used with success on any water which harbours a fish—whose food partly consists of any of the forms of the water insect which attains, as one stage of its existence, a flying state—and hence the importance of learning how to use a dry fly. Even amid the brawling cascades of a Norwegian foss, there will be found places where the dry fly is deadly. I remember on one such stream, which tumbles some 1000 feet down the

side of the precipices enclosing Vadheim, taking over twenty good trout with a dry fly, as I clambered up from pool to pool to reach the lake from which the stream issued.

I have used the dry fly for salmon during the last 15 years, for perch in Australia; for the "yellow fish" (the Mahseer) of South Africa; for trout in the Scottish lakes and their brawling tributaries; on the Swedish lakes and rivers; in Germany on the lovely Wutach, in the Black Forest, and in the Austrian Tyrol; in the chalk streams of Normandy; on Lake Superior, amid the Rockies, in the various states of America, on Vancouver Island, throughout the southern part of South Africa, etc., and my experience tells me that in all streams in which water insect life changes into a flying condition the dry fly can, at certain times and in certain places, be used as a lure with the greatest success. No trout or salmon stream can be regarded solely as a wet fly stream.

THE DRY AND WET FLY METHODS

As the wet fly method of fishing superseded bottom fishing as a sport, so is dry fly fishing rapidly superseding wet fly fishing, and however much may be said in favour of the latter in the early months, however great may be the art of using the sunken lure on a dry fly stream, during the rest of the year—still the method of dry fly fishing will, season by season, claim an ever increasing number of devotees.

There are many excellent dry fly fishermen whose greatest pleasure is to devote themselves to killing some

particularly big or wily trout, and who, with this intent, neglect other and more easily caught trout in order to creel this—the one object of their sport. There are others who will cast for none other than a rising fish,—viz., a fish which they may have been lucky enough to notice when rising—and who, failing to spot such a rise, are content to linger for long hours, mooning about the bank of the trout stream, until they or their attendant happen to spot a rising fish. Such men look upon the fisherman who fishes for a non-rising fish which he sees, or which he knows will be located in any definite position—but which may not be rising—as a sort of poacher! or, at the best, as wanting in sporting instincts.

There are others—and good fishermen too—whose great pleasure is to see the fish before casting, whether the fish be rising or not—and thus to have the delight of watching the rise, when they cast to the fish they have spotted. These at least are most likely to learn how to temper their methods to suit the fish, for they have the advantage of seeing the immediate effect they produce when casting.

There are others who do not wish to see the fish below the surface, who may not have the leisure to moon about a trout stream, waiting, like the sick at the pool of Siloam, for the stirring of the waters, but whose principal delight is that, by the skilfulness of their casting, their knowledge of the fish, flies, and stream combined, they are able to induce the fish, non-rising, or otherwise, to come for their fly.

As a well-known sportsman said to me many years ago:—"I do not much care whether I catch fish or not,

it is the delight of casting a dry fly to every likely spot which not only affords me a constant pleasure, but well repays a day spent by the river side."

It is on the correct choice of either method that the greatest success depends. When the trout are being taken freely by the dry fly method, the wet fly fisherman would be well advised to adopt that method, and vice versa. For dead or perfectly smooth water, especially later in the year, the dry fly method of fishing is without doubt the better.

But if sport is wanted, and opportunities of fishing are few, it would be a mistake for the dry fly man to reel up his line when a temporary thickness of the water shuts out his floating fly from the ken of the fish, and so prevents his fishing with a dry fly. If the rain has been a warm one, the trout are sure to be feeding toward the bottom of the stream, and probably on drifting matter, such as the drowned sub-imago, etc. It is then wiser for the angler to put on a wet fly cast, and, sinking his flies well below the surface, to fish his way down-stream; he is very likely to pick up some good fish, instead of losing half, or perhaps more, of his precious day's fishing.

RISING WATER AND NON-RISING FISH

When trout fishing it is well to remember that fish will cease to rise at a fly or to take his lure when the water is steadily rising. This fact will be particularly noticeable when dry fly fishing for trout, and the first signs by which the fisherman may determine the rise of the river will be that the fish cease to take his fly, but it may be noticed that for the first few minutes of a rise

in the water of a stream, the fish seem to be more lively, but as the water continues to increase in volume, they will invariably cease rising. I have evaded the misfortune of a temporary rise of water on one stream, by motoring down-stream, to where it had not yet been affected. Fishing, not long since, near Corneville on the Touche, in France—which stream runs into the sea at Trouville—I noticed about three o'clock that the fish had suddenly ceased to rise, and I then saw that the water was rising, owing to a thunderstorm which had left us dry but had taken place up the valley in which we were fishing. My host, the late Ivan Caryll, having his motor car at hand, we motored down some forty miles nearer to Trouville, where we continued to fish until dinner time with great success, the rise in the water not having had time to reach to our new locality.

Some rivers in the Northern Island of New Zealand run through argillaceous or calcareous country, and when rain occurs, these rivers become discoloured very quickly, and fishing in them is rendered impracticable. It is then quite possible and advantageous to continue fishing, by going a few miles to another water-shed and to rivers whose course runs through a different geological formation.

JUMPING FISH—INTERESTING THEORIES

When trout have not been rising and it is noticed that one or two medium sized fish throw themselves out of the water, it will be nearly always found that a general rise of the fish is likely to take place. On the other hand, if, during a good rise, one or two of the smaller fish are

seen to throw themselves out of the water, it is nearly certain that the rise will soon cease.

The only explanation of the phenomena, which I have been able to discover, is that—in the first place—certain flying insects (the sub-imago) of yesterday's hatch are emerging from their temporary shelters on the bank, etc., and are again approaching the surface of the stream from which they emerged, and that this approach—heralding, as it does, a good time for the trout—has attracted the attention of the smaller and more eager ones, who leap thereat out of the water as the flying insects approach it, their eagerness checking later on as these insects settle on the water.

In the second place—that the upward movement of the pupal forms, to enter their flying state, from their shelter amid the weeds—during a rise—is *ceasing*, and the fish, which have been following them to the surface, and taking them, ere they have completed their metamorphoses into their flying state, are devoting themselves to the few which are still remaining on the surface, and as these insects spring into the air, the small trout, in their eagerness, leap out of the water after them.

MANIPULATING AND SHOOTING THE LINE

As you have already experienced difficulty in managing your slack line when fishing, and also in manipulating your rod and line after the fish is hooked, I will utilize our luncheon hour by giving you a few hints on this subject.

There are at least three sound and convenient methods

of gathering in the slack line as it comes back towards the fisherman, when fishing out each dry fly cast upstream. When the fly, after it has alighted on the water, has only to travel some eight or nine feet down-stream, the rod *should not be raised*, but as the current brings the line back on its surface, and as the line begins to hang almost vertically from the rod point to the water, the left hand thumb or forefinger, by an outward movement from the rod, should gather in all such slack line as it is brought down-stream—the line being allowed to slip smoothly round the thumb or forefinger until the left arm is extended outward from the side. Should the back cast then require to be made, the line should be grasped between the finger and thumb firmly, and the back and forward cast should be made, but, as the rod straightens at the end of the forward and downward action, the finger and thumb, which have been extended, must release or feed the line up to the lower rod ring; the line will then, if the cast be properly made, be pulled out through the rings of the rod by the forward going motion of the line. This forward extension of the gathered-in slack line is known as “shooting.” It is evident that should a fish rise at the fly while the line is being thus taken in, the finger and thumb would nip the line as the strike is made. The rod *having been held low* and the slack line taken in by the hand, the tension will come on the hook before the rod point is more than seventy degrees above the horizon, and if the fish is struck, this backward action of the rod is continued, and absorbs the slack line, as *it is then* permitted to leave the finger and thumb of the left hand, which latter hand, thereon seek-

ing the reel, commences to reel in the line as the fish comes down-stream.

STRIKING

If the strike be properly made and misses the fish, the line will extend itself backward, as in the back cast, and the end be brought forward again in a forward cast, and the slack line—which has been held by the finger and thumb—is thereon released and allowed to shoot as the rod straightens.

The second method, when the fly has to float from ten to twenty or more feet down-stream, is also to keep the rod point down, but to take up the slack line between the rod point and the water by using the reel. It must be evident that the slack can thus be absorbed by the reel until the fly has only a few feet more to float down-stream, when the first method as above described can be adopted.

The third method, used when fishing a short length of line on rapid water, is *to raise the rod point* as the line comes back, but when the back cast has to be made—no rise having occurred—the rod point is lowered and the slack line is gathered in by the hand, and the backward and forward cast are then made, the finger and thumb releasing the line at the end of the downward action, as usual when shooting, etc.

Gathering in the line with the hand, and at the same time raising the rod point, *is a fault*, and for the following reason. As the line and the fly on the water must not be disturbed, it must be evident that when the finger and thumb have drawn in as much line as they conve-

niently can, *and when the rod has been also raised to an angle of fifty or sixty degrees* (the fault in question), there must be much slack line still between the rod point and the fly, and therefore, if at this juncture a fish rises at the fly and the strike is made, the hand holding the rod will have to be raised and to travel some way behind the head of the fisherman before the line is sufficiently tight to drive the hook into the mouth of the fish. This action brings the rod into a position from which it is, practically speaking, almost impossible to wind up the slack line which has been gathered in, and which is still held in the left hand, and to keep *at the same time* that constant and permanent strain on the fish which is so necessary, and the fisherman is obliged, therefore, when this happens, in order to keep the strain of his rod on the fish, to commit one of two faults, either to run backward, or to handline his fish.* Even if the fisherman be capable of striking the fish as it rises, the position of the rod will prevent his playing his fish from the reel and he will have to handline.

The first way is the best way.

By fastening the end of the line to a croquet hoop, or anything else on the lawn, these three methods can be practised by the reader, and he should gather in the line in the different ways I have described above, taking care not to disturb the line which is lying on the grass between the rod point and the hoop, until the strike be made, etc.

*Note: By handlining a fish, is meant using the hands to take in the slack line—as a fish comes down-stream, after it has been hooked—instead of *winding* this line in with the reel.

This method of practising is as follows—

After he has fixed his line, he should stand at a distance of eighteen yards from the hoop, his rod held horizontally about three feet from the ground, and having his line extended on the grass. If, then, he walks toward the hoop, the line will become slack under the point of his rod, in exactly the same manner as if it were being brought down-stream toward him after having made his cast up-stream, and he proceeds to gather in the line as in the first method above described. If, instead of fastening the line to a croquet hoop, a friend will hold it in his hand and, as the strike is made, walk rapidly toward the striker, the relative value of the above methods will become even more pronounced.

Should the three methods I have suggested above be practised, it will be found that the first is the best and safest. No contretemps can possibly happen.

In the second method, *i. e.*, reeling in the slack line, the disadvantage is, that, if the same distance in the next cast has to be covered as before, one false cast, at least, will have to be made, during which the line has to be pulled off the reel again, before the full length required is obtained.

In the third method, which is simply raising the rod when picking up the slack line, should the rod approach the vertical as the fish rises, it—the rod—will, at the conclusion of the strike, be pointing backward over the shoulder, instead of pointing upward and forward, and the control of the line by the reel may become impossible, and handlining *will have* to be adopted.

When dry fly fishing on a rapid river, and when using

only a *short* length of line, handlining is certainly convenient, but under other circumstances it is inadvisable and should not be allowed to become a habit.

In your latest effort at the trout, I directed you to raise the point of your rod as the fly came back, because we were casting to a definite fish, and your fly had not to travel for any distance before it had floated over and below your fish and another cast had become advisable. But where you are fishing the stream—that is, not casting to a rising fish—it is always best to let your fly, after it has alighted, come well back down-stream toward you, in order, perchance, to cover a possible fish which you may not have seen rise (see episode on the Beaver-kill, p. 195), but which may be awaiting a fly. This means, however, taking in a great deal of slack either with your finger and thumb, or on your reel, and of the two, the latter is, I think, in this case the better way.

HANDLINING

“Handlining”—a method of gathering in the line with the hands instead of by the reel—should not be adopted except in cases of unavoidable difficulty, otherwise a slovenly habit of using the rod and reel will ensue. If the method of handlining is adopted after striking a fish, it has to be continued until that fish is netted, but the slack line will, until then, prove a constant source of danger, should it be necessary to follow the trout down-stream and keep it under control. In this respect I venture to disagree with an English writer who advises his readers to slacken the line after striking a trout among weeds, and then to handline.

Naturally one would not drag a fish into danger except as a means of keeping it away from a greater danger, but a trout, after being hooked in a channel amid the weeds, will, in nine out of ten cases, dart into the shelter on either side, and I see little good in relying on the chance of his not doing so. It is only by keeping a constant tension on the line that the fly is, in many instances, kept in the mouth of the trout. For the slightest slackness of the line, especially if the hook be large, frequently permits the trout to use its tongue as a hook extractor and dislodge the fly, and as a result the trout escapes and the fly is caught on the weeds, and therefore, I think that neither slacking your line nor handlining is advisable when once you are fortunate in successfully striking a trout under such conditions.

HANDLING TROUT IN WEEDS

The writer, above mentioned, advises his readers to turn the fish, when amid weeds, and walk it down-stream directly it is struck. He claims that this method, if successful, possesses the advantage of keeping the battle from the hitherto undisturbed waters above; but a trout, except it sees the fisherman, or it should happen to be feeding at the tail end of a pool, generally runs down-stream unless it darts aside into the weeds, or to a definite retreat elsewhere. He might also claim that this method of handling a fish takes it away from its retreat and into comparatively speaking unknown regions. But, it has the demerit of leading the fish downward into weeds—the most dangerous of all manners in which a trout can enter them. It also has the demerit that, un-

less the trout happen to see the fisherman, and thus be scared into the weeds on the far side of the stream, he cannot keep the trout out of the weeds which lie between it and himself, which position, if once attained by the trout, is most dangerous.

It is better, however, to handline if you have lost reel control of the line, than to run the risk of losing your fish, and this method has a small advantage in that the jarring vibrations of the check of the reel are absent at a critical moment.

It must be remembered that trout which take advantage of the shelter which is offered by weeds are better fed and consequently stronger and larger. They are also more approachable, but though this may be to the advantage of the fisherman, yet it is more than counterbalanced by the difficulty of casting to, and playing, a trout when hooked in a narrow channel amid the weeds. If a trout be rising in such a place amid the weeds, the prick and check of the hook, as the strike is made, will invariably send it into its refuge among them, and, unless this channel be directly above and running toward the fisherman, there must not be the slightest hesitation on his part; drastic measures must be adopted directly his strike is successful. The head of the trout must be kept well up to the surface, and, at the risk of breaking the leader, brought above the weeds by a firm and maintained strain on the line; once the head of the trout lies on the weeds, the struggles of the fish will only serve to bring it over the top of them and toward the net. When handling a big fish in this manner, it will make a very great fight, but unless such tactics are adopted, it would

most certainly be lost, with probably a portion of the fisherman's leader.

I have known many fishermen afraid to cast to such a fish, assuming that they may be unable to land it, even if they are successful in hooking it. I think, however, that this is one of the sporting risks which should always be taken. It certainly affords me great pleasure when I have captured a fish that has been lying in what I consider to be an almost impossible position.

There are times when a big trout fails to seek security amid the weeds, and allows itself to be led gently down-stream to a place clear of weeds. I only remember having seen such an occurrence once, but it *might* be advisable to take the chances of its happening again.

If a big trout be hooked when directly up-stream in such a narrow channel, it should, if possible, be turned down-stream and kept coming down-stream toward the fisherman until clear of the weeds, etc.; but this, again, means drastic and immediate measures before the fish can recover from the surprise of the strike, and great care must be taken, when bringing it down, to keep as much as possible out of its sight.

THE LEFT HAND AND THE REEL

I will give you a few hints as to fixing the reel on the rod.

The traditions, handed down from the earliest records of fly fishing, associated as they were with the then only known method, namely, wet fly fishing down-stream, are responsible for the belief which exists in the minds of fishermen of to-day, that the handle of the reel must be

on the right hand side of the rod, and they have grown to believe that they cannot use their reel unless so fixed, *i. e.*, that they cannot use the left hand for winding. They have therefore been in the habit of using the right hand for winding in the line, having of course to change their grasp on the rod when using the right hand for casting with the single-handed rod, and also when the right hand is uppermost, when casting with the double-handed rod.

The following episode will illustrate the difficulty I sometimes experience in getting my clients even to consider the advantages of using the left hand for winding purposes, and of altering the position of the reel on the rod. I was about to coach a military client, whom I will call Colonel O'Brien, in the Spey cast, on my London coaching ground, and as he wanted my advice on his salmon rod, he had brought it with him. As I was fixing up a leader and fly, he put his rod together with the reel handles facing to the right—this I noticed after I had fixed the cast and fly to his line—and the following dialogue occurred:

"Colonel," said I, "do you always fix your reel with the handle on the right hand side?"

"Sure," said he, "I do."

"And do you prefer to have your right hand uppermost when you are using the salmon rod?"

"I do," said he.

"Then, Colonel, why don't you have the handle of your reel pointing to the left hand side, so that you can reel up with the left hand, without altering your hold on the rod?" I enquired.

"Sure," said he, "I never use my left hand for anything."

"What about eating peas, Colonel?"

"Faith! Are we talking about feeding or fishing?" he asked, raising his eyebrows.

"Well!" said I, "Supposing you are loch fishing, or fishing in slackish water, and the fish makes a terrible rush toward you, and you have not time to shift your hands, what are you going to do?"

"Sure," said he, "If I am in a hurry I twist my rod round"; and, saying this, the Colonel illustrated it by twisting the rod round, continuing to hold it with the right hand uppermost, and bringing the reel over the rod with its handle pointing to the left hand side; then seizing the handle of the reel in his left hand, he began to illustrate how he would wind up the line quickly in such an event.

"Colonel!" I asked, "do you kill many fish like that?"

"Sure," said he, "I kill half of my fish in this way."

"Well, Colonel! which hand are you using now?"

"Begorrah!" said he, after a moment's reflection, "I've been using my left hand all my life and I didn't know it."

Admittedly, it may be awkward in the *first few attempts* to wind the reel with the left hand, when the right hand only has been accustomed to the work, but then a similar awkwardness is experienced whenever we vary an accustomed method of performing any action. Take for example our procedure in putting on any garment, say a coat—if we are accustomed to insert the right arm first into its sleeve, let us instead experiment by intro-

ducing the left arm first, and the awkwardness will be at once admitted, but this does not infer that the latter method of putting on the coat is more difficult or that it could not be easily acquired.

A SUGGESTION PRO BONO PUBLICO

Cannot the inglorious competition, which exists among beginners, as to who shall kill the most fish, be mitigated, or stopped?

First—By the openly expressed disapproval of the more experienced and best-known fly fishermen.

Secondly—By stopping the window dressing methods of displaying the fish that have been taken, so frequently noticed at these fishing resorts.

It is quite a good plan to have cool, open refrigerating cupboards, etc., for keeping the fish which are brought in day by day, so that these fish may remain clean and wholesome, for as long a period as possible. But this everyday evening display of the fish is however not infrequently responsible for stimulating an ambition which, though easily understandable, is somewhat paltry.

Now, it will not take long to decide the question as to the objects which induce us to visit, and linger by, our trout streams. Is it for the pleasure, and the delight, which we derive from the sport itself? Or, is it for the pleasure of being able to say "I did"?

The answer coming from those who have some claim to be considered either as good sportsmen or as clever fishermen is absolutely certain: And as to the others, they will find that it is not necessary for them to reach to the age when they pass their treasured rod and outfit

to their grandchildren before they will recognise, as did old Walton, that our records—even the most meritorious—fade.

“*Sic gloria transit mundi.*”

UNDERSIZED FISH

When a rule as to the size and weight of a creelable fish is enjoined on any water, I think most fishermen consider it better to return to the water any fish the size or weight of which questionably approaches this limit.

The keeping of undersized fish, when they have been injured, is, and must continue to remain, a very delicate problem. Whatever may be the rules governing any water, a trout, foul hooked in the eye, for instance, should not, in my opinion, be returned to the water.

HANDLING A TROUT

If proper care be used while extracting the hook from the mouth of undersized trout, no injury should be inflicted, from which the fish will not speedily recover if returned at once to the water. The injury done to fish by the handling they undergo, before they are returned to the water, especially in those waters where trout are plentiful, and where the fisherman is certain to have to return a good number, may be minimized, if a white cotton glove be worn on the left hand, and if, before the fish is handled, this glove is wetted—holding the hand under the net, when the latter is withdrawn from the water, is the most convenient method. By adopting this precaution the skin temperature of the hand is immediately lowered, and the—in my opinion—disastrous

effects of scalding the mucus off the scales of the trout, are avoided.

When fishing, if it be seen that the size of a fish hooked is below that which the fisherman wishes to retain, it is a good plan to relax the pull of the rod and line altogether, and in four cases out of five, it will be found that the fish will be able to free itself.

The advantages of such a method are—first, that one avoids handling and hurting this delicate fish,—secondly, it is a cleaner and better method of getting rid of an undersized trout—and in the third place, the fly is less likely to be damaged than when it is liberated by the hand.

The above advice emphasizes the danger of relaxing the line when the escape of the trout is not desired. A taut line should be the object aimed at by all fishermen, after the strike is made.

TAKABLE TROUT

The ridiculously small limit placed on keepable trout, in some of our States, is absurd.

Stream trout, in my opinion, should not be killed under the age of three years.

The increase in the weight and length of trout varies considerably, a four-year-old trout on a rapid, a weedless or a rocky river being no larger than a two-year-old fish under the best river conditions. The principal advantages or disadvantages of each season, on the average growth of each year's stock of trout, should be considered, and the limit imposed on any water should vary in accordance with the condition of its three-year-old

fish. The limit should not, I think, be as regards weight or size, but rather as regards the age of the fish, either a three-year-old or a four-year-old fish being creelable, as the case may be. Thus, if the three-year-old fish of a certain year run from $\frac{3}{4}$ lb. to well over 1 lb. the limit should be $\frac{3}{4}$ lb. It should not be necessary to weigh such fish.

WEIGHT LIMIT

When a weight limit is enforced, however, a small muslin bag should be carried, into which, after it—the muslin bag—has been wetted, the trout can be dropped, and then weighed on a pocket spring balance. But even this method causes prejudicial handling, and a longer delay in returning the fish to the water. If, then, the owners of the water would give a few minutes' consideration to the probable length attained by their three-year-old fish each year, and select a size covering the greater number of such three-year-old fish, they would, while preventing the two-year-old fish from being killed, give themselves, their friends, or the public, better sport—prevent the appearance of so many discoloured fish, and thin out the fish of three years' growth whose presence is least desired, *i. e.*, those fish whose growth shows them to be of weaker character than the rest of their own year's hatch.

Sometime ago, when designing my Shaw fly rod, I made the lower whippings of the butt-joint exactly one inch apart, and numbered them from one upward to fifteen. If then, the limit be one of size, the fish—directly it is lifted from the water—can be held up by the wetted,

gloved hand, to the marking on the rod, and if found to be short of the limit, it can be returned to the water without delay.

Unless great care in the handling of a $\frac{3}{4}$ lb. trout be observed, it is far better, I consider, that it should be creeled than that it should be returned, for the injury to such a fish which follows scalding from injudicious handling tends to create a black or discoloured fish, and predisposes the trout to the attack of fungus.

Let me here impress upon the novice, that he should have due consideration for the rights of the owner, his fellow fishermen, the trout, and the stream. Give them all a chance. Never take undersized trout; never make a boast about big takes of trout. Never be discouraged. If fish are small, put on the finest tackle and keep only the largest fish. Every day on which you fish, you will most certainly add to your knowledge and skill. Although the fish may be untakable and your luck villainous, your fortune will turn. The apparently worst day may, before it closes, produce the biggest fish, and you will find, as your skill increases, that the pleasure of netting a fish you have beaten, and then returning it to the water, is much greater than killing it and carrying it home.

THE SPRING FISHERMAN

It is almost impossible to avoid alluding to the opinions of the great majority of the dry fly fishermen, who have to depend on our public trout streams for their summer sport. They complain bitterly of the way in which these streams are fished in the beginning of the

fishing season, and it is because such a condition of affairs can, and should be, altered, that I have ventured in my chapter of Axioms, etc., to make a few suggestions, not only to those who are in authority, but to the fly fishermen themselves.

THE ULTIMA THULE OF THE SPRING FISHERMAN

The ambition of the Spring Fisherman, hereinafter alluded to as the S. F., appears to culminate in the number of the fish which he may hope to weigh in, and display, at the conclusion of some lucky day's fly fishing.

The greater this show, the more the honour, etc.

This transient ambition, pardonable in the very young and merely regrettable in a beginner, being thus once attained by the S. F., lands him on a pinnacle of local fame from which he may find it painful to descend.

After his very happy catch of fish has been displayed, and even while the aura—which in spite of his modest self-consciousness, subconsciously exudes from his being—is beginning to fade, he may have little to distinguish him from his not quite so fortunate brethren of the angle, and were it not that his lucky catch is sometimes alluded to, by some disgruntled brother fisherman, in order to wound the “amour propre” of some other fairly successful, but otherwise quite unoffending, visitor, he—the former mentioned lucky S. F.—might gradually regain his former position as a quite ordinary and even lovable brother angler.

Ah! Happier he were he to seize this,—the supreme summit of his fishing aspirations—and “girding up his lions and packing up his duds”—as the late Mr. Arte-

mus Ward has it,—flee the scene, etc., and, with his record and with his rod, hie him to some other and distant fishing resort, where possibly his subsequent successes, or failures, would not be likely to excite the envy, or incur the disdain, of any other S. F.

But alas! he fails to take this narrow and perhaps easy path to safety and peace, and in a weak moment he decides to tempt fortune and endeavour to continue his successes, and if possible to excel his previous triumph. He does not know, unfortunate man, how hard he will have to work in these attempts to remain on his pedestal, or how he may come to curse the results of his so-called “lucky day,” and so he stays on and, with set purposes and determined aspect, fishes vigorously.

It may be noticed, at the early breakfast table of the hotel, that his place is already vacated and that—judging from the shattered egg-shells and the half-consumed rolls, left lonely and forsaken in front of his usual seat—he has already projected himself from the cheerful precincts of the hotel, on an otherwise peaceful world.

He may appear later, after the usual evening display of trout by each lucky S. F., but it will be noticed that though his creel may be light, his manner denotes fatigue and his attitude that of a soul laden with care.

Facilis descensus averni; and even so, may now be his downward progress as a S. F. It may be, that in order to “save his face” he will be compelled to adopt methods of fishing which he will feel, *at first*, are inartistic in execution and possibly un-sporting in character. This justifiable sensitiveness will, alas, disappear, as non-success blunts his consciousness and gives place to the obstinacy

of desire. He knows that in the early spring days, in which he is now fishing, the fish are still so hunger impelled as to be by no means critical of either the appearance of the flies, or of the style in which they are presented, and therefore, during his by no means gentle but avid and meteoric rush after fame, his principal anxiety is to be the first to reach each so far undisturbed bit of fishable water. Heavy gut leaders, which rob the fish—when once the lure is taken—of every chance of escape; handlining his fish after they have been hooked, in order to increase the number of fish he takes during a transient rise, rushing up or down-stream, so as to be the first on each likely bit of water, are some of his many sins.

He does not perhaps realise that he may be forcing his brother fisherman to adopt similar tactics, or, condemning them to discover, after a ruined holiday, that the fish in the water they are so carefully addressing have been day by day frightened and put down, by the rough and hasty methods of his early dash up-stream. He, poor man, is only anxious to secure fish! and in his selfishness he may go even so far as to hoodwink his anxiously inquiring brother angler, as to the patterns and the size of the flies which, he thinks he has been 'fortunate enough to discover, are killing the fish.

Keeping all the small fish permitted by indulgent but shortsighted fishing laws—breaking the neck and stretching at times a doubtful one—so that it may pass the vigilant eyes of any fishing inspector, and thus be included in the number of fish which he is allowed to keep, and which will go to his credit. Creeling any trout

caught, no matter what its condition may be, discoloured with handling, ill-conditioned after a late recovery from spawning, fungus smitten, etc., etc., these, and no doubt many other devices, are among the many methods this otherwise honest and quite amiable fishing enthusiast may be impelled to adopt, in order that the glory of a transient fame may not be called into question, before he leaves his fishing quarters and seeks the friendly ears and ready sympathy of his family circle.

FLOATING AND SUBMERGED LEADERS

The question as to the value of a floating or a submerged leader to the dry fly fishermen will depend on the following factors:—His skill in casting—The size of his fly—The thickness of his leader—The character, colouring, and depth of the stream—The conditions of the weather—and the shyness or otherwise of the fish he wishes to take.

If the object of the dry fly fisherman is to keep his dry fly floating for some time on the surface of the water, a line or a leader which sinks below the surface will undoubtedly tend to drag the fly under the surface, and therefore, a leader which thus drowns his dry fly will be condemned. But, for so long as the gut forming this leader bears a proportional delicacy to that of the fly, it should not scare the trout, when it is floating, even when the sun is shining and the water clear.

It cannot be denied that even a most delicately thrown leader of the finest gut will invariably cause a tiny series of small waves to spread out from a falling line, and the refractive and reflective influence caused by these waves

will be undisguisable. But this wave effect, though very small and transient, must not be confused with the still smaller light disturbance caused by the effects of the finest gut when lying extended and undisturbed on the surface of the water. In order that the relative influences of the waves caused by a fine fishing line as compared with the appearance of the line itself may be appreciated, I had some photographs taken by a very powerful telescopic camera, one photograph of which is shown.

In this photograph it will be seen that the line on the water is barely noticeable, but that the waves which are proceeding outward from each side of it, and which are caused by the falling line, do present wave motion, which, however transient they may be, would undoubtedly produce a certain amount of refractive undulations of light, if thrown on to a clear, sandy bottom. This effect, however, would be very transient and would be eclipsed by the waves, and the appearance of the fly itself.

Admittedly, however, that a floating leader of silkworm gut on the surface of the water might cause a shadow in clear water on a sunshiny day, when falling on a sandy bottom, and also, that if the glisten be not taken out of this gut, it might possibly tend to scare the trout even when the leader and fly be thrown delicately and accurately.

Experience will teach an angler that his leader should fall in a straight line; that it should lie evenly on the surface of the water; that its glistening surface can be rectified; and that, if he use a 4x gut in the last three



THE WAVE EFFECT AND CURVATURE OF THE LEADER THROWN IN A RIGHT
HAND SIDE CAST.

The wave effect at the bend is greater than it would be in a delicately cast straight line. The curvature is due to the premature release of the line in "shooting," anticipated by about one-third of a second. The camera used in above photograph was inclined at an angle of about 45° to horizon and does not give the full nature of the curvature.

feet of his tapered leader, the shadow which it throws will be inappreciable. It, therefore, remains for the fly fisherman to cast properly; to fish with decent tackle; to efface the glistening character of his leader; to treat the trout with ordinary respect; and to present to them—delicately and accurately—his carefully chosen flies, and if these simple matters are attended to, he will, generally speaking, have no necessity to worry over the question, as to the sinking his leader. If, in spite of his taking these reasonable precautions, he is inclined to blame his want of luck to a floating and glistening leader, his remedies for the evils are simple.

THE REMEDY

If his hand be free from grease, and if he will take a handful of clean river mud or earth—not sand—and with the hand firmly closed, draw his leader a few times through this mud, he will find not only that the shine has been taken out, but that this treatment has taken any fat or grease off his leader and that it will sink readily, when it falls on the water. If again, it has been well soaked before it is used, the leader should fall quite free from twists or turns. If there be no mud visible, the fisherman must step to the nearest bank and get a handful of earth, moisten this earth in the river and draw his leader through it as before. An English friend of the author's—one of the Illingworth family—who fishes an extremely clear stream in the north of England, carries, in a small circular metal tobacco box, a certain quantity of Fuller's Earth, and also a small sponge partially saturated with water. If he thinks, when he is fishing, that

his floating leader is likely to scare the trout, he opens his box, rubs the sponge well in the Fuller's Earth and then passes his leader a few times through the sponge. On one occasion when fishing with him, I borrowed this box and used the sponge and the Fuller's Earth on my leader. The Fuller's Earth took the glisten out of my line and permitted the leader to sink below the surface, and though I do not know that I caught a greater number of trout than before, I certainly admire the ingenuity of this method.

I have not so far adopted these precautions when fishing in this or any other country, possibly because I fish with the finest leaders and cast a perfectly straight line, but, if I imagine that a failure to catch trout was due to a floating or glistening leader, I should certainly pass my leader through the mud of the bank, or adopt the small box of Fuller's Earth, used by my friend in England.

When fishing with a dry fly on a deep river or on a lake, I generally use moderately fine gut, and I cast as delicately and as lightly as I can, and, I do not think, from my own experience, that the shadow question need cause the average fly fisherman any trouble, especially if he remembers the above suggestions.

GOLDEN HOURS FOR FISHING

The forenoon is, in my opinion, the most fascinating time for fishing; there is no *arrière-pensée* as to coming darkness, the whole day is before one, the creel is light, and the anticipation and hopes of sport are keen. The higher the temperature to which the water attains, the earlier, or the later, are the hours to be preferred.

THE EVENING RISE

Although some hours cannot be regarded as favourable ones in which to fish, yet trout will rise at floating food at all times during the night or day. After a bright and hot day during the summer months, the sub-imago stage of life will be assumed by many water insects as the atmosphere cools, while innumerable spinners, the imago forms of water insect life, will float or soar through the ambient air in the delicate mazes of their bridal dance. The trout at these times indulge in their usual evening carnival, presumably busy amid the ascending nymphæ, or perchance feeding eagerly on some smut-like flying insect.

After this rush is over, they settle down with serious supper intentions, and continue feeding at intervals, sometimes well on into the small hours of the morning. As darkness deepens, and before the full moon has risen to keep her vigil and illumine with her silvery enchantment the first sweet slumber of Nature, the fisherman, who has perhaps had a bad day, may be tempted to fish on, regardless of dinner consideration or of losing his last train. By facing west he can still detect the rise of feeding fish, and even if fish are rising close to the opposite bank and out of sight amid its shadows, the sound of the rise will very frequently guide him in making an accurate cast, and eventually landing a big fish. The rise of the fish at his fly will in most cases be seen, felt, or heard—seen, because a comparatively big ring will be caused by a rise, and on the slopes of the attendant ripple the glint and reflection from the western sky will be

detected, even amid the blackness of the shadows under the opposite bank; heard, because the evening rise of a fish at a floating fly, owing to its more limited vision at night time, is frequently more sudden and less dignified, and therefore, in most cases, more clearly audible amid the general hush of Nature; felt, because the fisherman's line at night should be as straight as possible, and when the fly is taken by the fish the tug will in most cases be distinctly noticeable.

FLY FISHING AT NIGHT

There are undoubtedly rivers or lakes on which, owing to the temperature of the water, during the day time it is almost impossible to obtain a fish, but on which it is possible to make very good baskets of trout during the night time, by casting well across the water with a large and darkish dry fly, and drawing this fly slowly over the top of the water, thus imitating the fluttering motions of a flying insect which has fallen on the surface.

A "dry" fly, which, from its size or its drag, will put a fish down in daylight, appears to stimulate the same fish at night time. One can, therefore, fish with a dry fly at night, can throw to the sound of a rise, and, by gently dragging the fly along the water, can feel the touch of the rise which is likely to follow. A large fluffy fly, such as the Stone Fly, or a Sedge, will be found to be useful.

The best method, in playing a fish at night time, is to move the rod point in the opposite direction to that toward which the fish is struggling, and to continue to

do this until the latter is sufficiently quiet to be drawn in and netted.

FISHING BY MOONLIGHT

And now the moon has risen and is lighting a path of silvery brightness on the placid waters of the trout stream. You are wading, and the stream is broad, and the banks low. Watch this path of melted silver, spilt as it were on the inky surface of the stream, and ere long a small speck will appear, followed by a single tiny ring which quietly opens out round it—a rise which would not, perhaps, have been noticed in the daylight, though probably caused by a good fish. Now throw your Silver Sedge just above, and let it float over the place in which you saw the rise, and you will get your fish, maybe with less trouble than you would experience in daylight. The pall of night is your background, and, therefore, the fish are less able to see you; they are not so suspicious, nor so prone to seek the shelter of the weeds or the entanglements of their retreat, and until they see you they will not know from which quarter comes the galling restraint of your fly.

THE FEARS AND THE JOYS OF A FLY FISHERMAN

Although the trout is possibly the most alert of all fish, it is not advisable to allow the fear of scaring it to spoil the pleasures of fly fishing.

To cast your fly accurately and delicately; to keep well out of the Ken of the fish; to use a fly whose size and colour are similar to those on the water; to see that your leader is sufficiently light to fall on the water

after it has been extended, without attracting the notice of the fish; and to fish the nearer waters for the nearer fish before trying to fish for the more distant ones, are sufficient in themselves to insure success.

DRY FLY FISHING VERSUS GOLF

The art of casting a dry fly accurately and delicately is, however, just as necessary and equally, if not more, essential, than the art which has to be used when striking a golf ball—for however rottenly a golf ball may be fozzled, and however bad may be the language, or absurd the antics, of a golfer, these adjuncts of golf are not likely to scare the “hole” on the desired green into precipitous retreat. Just as great an art and science is required in the various methods of projecting a dry fly, whether in an open or a difficult stream, as is required when striking in an absolutely faultless manner any sort of ball, in any sort of “lie,” to the desired green. But here the comparison ends, for the golf ball, having been either properly struck—or fozzled—progresses until it ceases to roll, and will then lie dead, and will, until it is once more addressed by the player, afford no further thrill and presents no further difficulties until the next stroke is made. But just think of the variety of interests, hopes, and possibilities which follow each cast made with the fly; consider the fly, as it floats down-stream, after it has made its absolutely accurate passage to its scientifically chosen goal. It has, because it has been properly cast, properly selected, and properly treated, fallen light as a gossamer, and is now floating to the spot at which the

rise of your trout has been seen, or to a position which you know, or assume, is directly above a fish.

Consider the absorbing anticipation preceding the expected rise; the stimulant of the rise; the instant and experienced act of striking; the thrill of the answering rush of the fish, and the tense moments of the fight, all of which are supplied by the life and death struggle of the fish. Remember the anxious interest attending the approach of the fish, to each hazard (*i. e.*, each danger spot) of the stream, and the final and supreme satisfaction as the fish, submitting at last, is induced to accept the well trained presentation of the net. All of these thrills add a hundred joys to the pleasure of making a plumb centre in your original cast, which cast must be accompanied by no less skill or experience, than that employed by a scratch golf player when making his most successful drive or approaching shot.

WHEN CASTING A DRY FLY

The Possible versus the Probable

In fly fishing—as in all other mundane matters—it is the “Possible” which should be carefully considered, and which will bring that reward which is the happy lot of the successful sportsman.

It is well to remember that the wise man anticipates the “Possible,” but also that most of us are, at one time or the other, misled by the “Probable.” So it is that when casting a dry fly—except when fish are rising—you will have to trust to your own experience, when anticipating every possible position of an unseen fish in the river. It is this problem which makes dry fly fishing

so interesting, for every position in which a fish may be lying has to be taken into consideration when fishing up-stream, in preference to the more cursory consideration, which is too often given by the wet fly fisherman, to the *probable* position of a fish, and therefore the fisherman—like the sportsman who inspects the saddled horses before each race, and selects and bets on the one which he thinks will possibly win—has the pleasure at least of backing his opinion, and his pleasure, therefore, is vastly increased every time his judgment lands him with a winner.

WEEDS

It may well be asked: As river weeds so often rob the fisherman of his fish, why are they left in the river?

There are several considerations which have to be taken into account with reference to the water plants or weeds in a trout stream. The owner must consider the necessity of keeping open his water way, and preventing these rapid growing plants from choking up the channel of his stream, a fault which would lead to the flooding of the adjacent property, damage to the river-banks, and the probable loss of many good fish.

But in the more rapid and rocky streams of the states of New York, New Jersey, Pennsylvania, etc., it is the want of water weeds which constitute an evil, and not their over-abundance. It would be greatly to the benefit of streams such as the Beaverkill, etc., if efforts were made to establish the best kind of water weeds in them, to provide shelter and food to the trout, and also to offer them a fairly good sanctuary when hard pressed.

The fishing owner has to remember that these weeds,

when kept within certain bounds, are most beneficial to trout life. They keep down the temperature of the water and are a refuge to the trout, not only from mankind, but from the otter, the heron, and other enemies; they provide a never-failing supply of natural food, as well as acting as filters and natural purifiers of the waters in which they exist. The Ephemeridæ and other water insects are always plentiful in weedy rivers. The freshwater shrimp, one of the principal foods of the trout, abounds and multiplies amid the shelter of the weeds. Trout-breeding establishments make, or should make, a regular business not only of supplying the best weeds and water bushes for trout streams but of assisting riparian owners—who wish to afford shelter or create a natural food-supply for their fish—to get the weeds suited to their streams.

Riparian owners must also take into consideration the valuable effects which the water plants have in checking the down-stream flow of water in the dry seasons, and by this natural damming action, keeping a plentiful supply of cool water in streams which would otherwise soon run very low.

FUNGUS ON GROWN FISH

A trout may be caught at times suffering from a fungus or a growth on the head, shoulder, or other part of the body. The student will be well advised, after netting such a specimen, to destroy it at once, taking care not to return it to the water or place it among his clean fish. Fungus can at times be cured by dipping the fish in a strong solution of salt.

It is the salt in the sea water which effectually eradicates the germs from the wounds which a salmon receives during a futile effort to reach spawning ground, and by going to the sea makes the ultimate cure of such wounds certain. Ordinary fungus is a growth which attaches itself to any bare spot on the trout's skin, caused by a wound or the accidental loss of slime. The natural mucus on a trout protects the skin from fungus in exactly the same manner that Peacock's Paint protects the bottoms of iron ships from barnacles, etc. The fungus is in itself harmless, but it sometimes contains worm-like parasites of microscopic character. These attach themselves to a portion of the fungus near the skin of the trout, and are continually eating into the tissue of the fish. The mouths of these worms are armed with tentacles, with which they can adhere to any portion of the trout's skin which may be unprotected by slime.

If the worms be killed by salt solution, the fungus then disappears. If, however, any portion of the living and dangerous fungus be returned to the water, it will carry with it a percentage of these deadly pests; hence the necessity of its destruction to insure the protection of the healthy trout in the same stream. The bare places, caused by the fry nibbling one another, are an ever-present source of danger to these small fish.

SELECTING THE FLY WHEN BY THE WATER-SIDE

So long as the fisherman has from eight to twelve of the flies which are likely to be on the water which he is going to fish, his only difficulty will then be the deter-

mination of which fly to use. When he reaches the river, he should, as soon as possible, find out which fly is being taken.

It is just here that the utility of a small, light, and collapsible butterfly net must be again emphasized; no article, after the rod, the line and flies, the reel and the fishing-net, is more important to the dry fly fisherman. It is always difficult, and often impossible, to catch the elusive winged insects, which are flying or floating rapidly past, without such a net. With a net, however, little or no time is lost, and fly after fly can be easily and quickly netted, and examined, and then compared with the artificial flies in the student's fly box, until he is able to select the correct fly to use.

THE CAP AS A FLY HOLDER

A good place to keep the fly which you have just taken off your line is undoubtedly the cap. In this position the flies dry quickly, are secure, out of danger, and always very handy. The flies placed in the cap during the day can be sorted and replaced in your fly-book or fly-box when you get home. The only drawback to this plan is that in wet weather the hooks, if allowed to remain in the cap, are likely to rust as they dry. Flies in the cap are also apt to excite attention, and hints from friendly strangers that "Your hat, sir, is covered with feathers," etc., have been frequent. When I was coming home from fishing one day on the top of a bus, a fond mother kept her children quiet for sometime, by an entomological discussion as to the nature of the "tame" flies grouped on my fishing-cap, and

a droll remark was made by a newspaper boy, who, when offering me an evening paper, said, "Hexcuse me, Sir, but your 'at is hall hover hinsecks!"

DRY FLY FISHING WITH THREE FLIES

Now we will suppose you have just arrived for the first time at a stream for a few days' fishing. It is an ordinary trout brook, and you may not have any one with you, to suggest the correct fly with which to fish.

There are no flies visible, spider-webs have not helped you, etc., and the trout are not rising. How, then, are you going to determine the correct fly to use? It is by no means a bad plan—although not usually adopted—in order to save time, to place a fly, *say* the Olive Quill, on the end of your leader; then, three feet up the leader, with a very short end, attach *say* the Blue Quill, and again, three feet further up, *say* a Red Quill, oil the leader and each fly, and treat the three flies as you would a single dry fly, and fish the stream, and change these flies for other—if none of them be taken. I have often, by adopting this method and fishing the likely spots, discovered a fly which the fish will take, and by discarding the other two and fishing with the remaining one, have saved much time and caught fish which I should not otherwise have taken.

Even when the fish are rising, it is often difficult to find out the definite fly which they are taking, and when, for experimental purposes, you may, as above advised, be fishing with three dry flies and happen to catch a rising fish, examine the food in the upper part of its gullet. This can be done by a gentle upward pressure along the

body toward the gills, which will express the latest food taken into the mouth. The chances are that the sub-imago form of some water insect will be found there, as well as the pupæ of the same insect, and if the fly on which you have taken this fish does not secure you trout when it is fished as a single dry fly, try an imitation of the food found in the fish's gullet.

There are many days, mostly in fine weather, with clear calm water, which require the floating fly to be in the most perfect condition possible, while on a few other days, and in perhaps rougher water, the more fluffy and knocked-about the fly be, the more deadly it appears to become.

When hesitating as to the size of any fly it is better to choose the larger size, even on well-fished waters.

But it must also be remembered that educated trout may easily be "put down" by a fly larger or smaller than the natural fly on which they are feeding.

MOTHS AND OTTERS

Moths constitute a very real danger to the security of all artificial flies, and during the off season camphor should be freely used.

"Otters is pisen whenever met." They are carnivorous, and those which inhabit or visit trout lakes and streams exact a toll from these waters which is thorough and destructive. Otters, in any particular stream, may eat, and may even prefer, the frog and the eel to the trout. Evidence on this point is, however, very meagre and one-sided, but what about the stream which supports trout only? Even with a partiality for partridge,

I have known people in the close season content themselves with spring chicken.

BULGING TROUT

Trout may at times—such times being generally bad for the dry fly fisherman—be seen feeding on the nymphæ of water insects. On these occasions, though the trout may follow these insects to the surface, they take little or no notice of the natural or artificial fly. When the trout are occasionally showing the dorsal fin and part of the back above the water, they are then said to be bulging. If the fisherman finds that the trout, in these circumstances, persistently refuse to feed on the floating fly, his best plan is to change his flies and fish up and across stream, wet-fly fashion, using a short line and two or more hackle-winged flies. These flies should, if possible, resemble the nymphæ on which the trout are feeding, and the spasmodic swimming action of the nymphæ should be imitated as closely as possible, by a series of very small jerks given to the artificial fly as the cast is drawn through the water toward the fisherman.

I have found that a hackle medium Olive Quill is very useful. On one occasion, when fishing on a delightful chalk stream in Normandy, I gave up any attempt to attract the fish—which were showing up in all directions—with the dry fly, and by adopting the above method secured quite a respectable basket of fish. I have since then, under bulging conditions, tried a Gold-ribbed Hare's Ear, also a Greenwell's Glory. By cutting off a considerable portion of the wings, I think the reader will find either of these flies well worth trying, the gold

ribbing being most likely the attraction. Alders, or Coch y Bondhu, of the hackle kind, can at times be used with success when trout are persistently bulging, but moderation should be shown in regard to the amount of the hackle.

KEEPING THE LINE CLEAR OF THE ROD AT NIGHT

A word as to casting and fishing when daylight has ceased and before the moon makes her appearance. In order to keep your line clear in casting, bring the rod back a little to the left of the vertical, and return it slightly to the right, or *vice versa*. This should effectually prevent fouling, always allowing plenty of time for the line to extend itself behind. The line should, however, be drawn through the fingers every few minutes, in order to make certain that it has not fouled. When a breeze is blowing across your line, always bring your rod back slightly to leeward, and return it slightly to windward of the vertical plane in which you would otherwise cast, and use a short leader.

CHANGING THE FLY AFTER DARK

Now as to the greatest difficulty of all—the changing or replacing of trout flies on the cast after dark. This is a difficulty which has on more than one occasion robbed me of the charm of redeeming the ill-fortune of a poor day, when the very audible but invisible activity of the trout was telling me of a long delayed and anxiously expected rise.

In the dusk, with no lantern and no one to help, the chances of replacing a lost fly are infinitesimal. A small

portable electric light is being sold which effectually overcomes this difficulty. This lamp can be suspended round the neck, lies flat on the breast, and, when turned on by means of a switch, sheds a bright and constant beam of light full on the hands, etc. It is cheap, and has a two-candle power lamp, lasting for hours. It can be recharged by dry cells in less than two minutes. This light is only wanted at rare intervals, and never for more than three or four minutes; its use permits the angler to continue his fishing, however dark the evening may be.

“THE TROUT ARE RISING—COME DOWN AND FISH”

What delightful memories are recalled as we open a telegram with the above message, even though we, alas, cannot accept it.

The glorious sunshine of early summer; the fragrance of the spring flower; the song of the birds; the silvery tones of the rippling trout stream, are all recalled as we sit in our office chair, and bring back to us the glamour and the joys attendant on the springtime of life! After all, are not the pleasures of these distant days those which we always think of as the best?

A very considerable portion of the charm, attached to fly fishing, lies in the exquisite beauty of the scenery through which our trout streams wander, but quite apart from this sylvan beauty and the sport which these streams afford, they appeal to our sense of freedom, and to the escape which they offer to us from the care and worries of our town life.

But to these joys of dry fly fishing—the most enduring and delightful sport in the world—are to be added the

joy in our mastery of the scientific art of casting a fly, for it not only requires exceptional skill to cast accurately and delicately under any circumstances, but dry fly fishing demands all the knowledge which experience and close observation by the water side can supply; all the alert attention which the mind can command, and an ever-ready ability to meet each contingency of this sport at a moment's notice.

Attention can never be relaxed without endangering an opportunity which may perhaps never again be offered to the fisherman.

Here, then, is a brief but delightful reminiscence of an afternoon on the little Beaverkill River.

TROUT FISHING IN THE CATSKILL MOUNTAINS

The glorious sunshine, the soft sweet scent of flowers, the song of the birds and the purling ripple of the stream greet us as we pull up at the Farm on the Upper Beaverkill, which was to be our fishing quarters for the next two weeks.

The roads had been perfect and the scenery lovely on our way from New York; the afternoon was still young and the river, but a short distance away, was calling with its musical cadences "The Trout are Rising. Dear people, come down and fish!!"

We dismissed our automobile, and, after making the acquaintance of the people of the house, proceeded with careful speed to unpack our rods and tackle and to get into our fishing clothes and waders.

We were, that is my wife and myself, to be in undisturbed possession of the three miles of well stocked and

carefully preserved water, which ran past our door, and situated some twenty miles above Livingston Manor.

Those who have had the good fortune to visit this part of the Catskill Mountains may recall the old farmhouse, overlooking the stream, just above Turnwood, and the wide veranda shadowing the road, which road has clung to the leafy reaches and the picturesque turn of the river, on the way up from Livingston Manor, and may be able to realize the pleasure we felt at the prospect of fishing this lovely stretch of Trout water. To us, that is, to Slender and myself, it appeared a paradise, and a delicious thrill of anticipation ran through us, as we looked down upon our river—and discussed the flies we should use, as we greased our lines and soaked our gut leaders on the verandah.

At last we find ourselves at the river, with its limpid waters sending a cooling touch through our waders and looking eagerly up-stream for the anticipated rise of the trout. It did not take us long to discover that a rise was on, although we could not distinguish the exact fly on which the fish were feeding. Slender thought it was a variant of the Ephemeridæ family, sometimes called the Pink Lady, and thereon proceeds to place one on her tapered leader—I am inclined to try a very killing fly on these waters known as the Royal Coachman and while the Pink Lady is being tied on and anointed with mucillin—for we intend to fish with the dry fly, up-stream—I put on a spent winged Royal Coachman, and turn my attention to my companion, who is now wading across the stream, to where a good steady rise has been noticed, some fifteen yards above us. What a perfectly

charming picture she makes as she extends her fly out to the required distance. The water carries in its pellucid depths all the fascinating transparencies of my dreamland brooks, while the golden and olive greens of the foliage of the bank, topped by the clearest of cobalt skies, form a most perfect back-ground as cool and delightful as it was refreshing to the senses.

Slender is now addressing her fly to the upper end of a dark green glide in the shadows of her bank, which glide, springing from a mysterious depth just under a half submerged piece of timber, was no doubt the home of the trout, quietly feeding some three feet below.

The Pink Lady has fallen with the wings beautifully cocked just short of the log and on to the water as it comes bubbling up from underneath, and as it floats down I can see rising from the cool, green depths a shadowy form becoming more and more definite as the trout—a big one—moves steadily to the floating insect. Slender, with her rod held well down, is gathering in the slack line with her left hand and, as the trout dimples the surface in its rise at the fly, strikes—but, her line and fly spring backward over her head as the ripple made by the trout spreads out and dies away. The strike was made at the right moment, but the trout for some reason came short, and, as Slender returns her fly to its former position, the trout is again seen rising but, apparently dissatisfied, sinks again before reaching the surface.

Slender allows the fly to continue on its down-stream course, and just as she is about to make another cast upstream, the fly disappears, as a bright flash of light

springs from the water, evidently caused by a smaller trout—not hitherto seen by us—which rises with a rush, to secure a morsel which has apparently escaped the attention of its bigger companion. Slender has struck without delay but she again meets with disappointment, the mouth of the fish not having closed on the fly, which was possibly rejected for reasons similar to that which had actuated the bigger fish. “Try once again, dear,” I call out, and Slender, after drying her fly, returns it once again up-stream. This time its voyage down-stream meets with no response, but we notice that the big trout has again risen and taken a natural fly, as it alighted on the water. Slender’s casting has been perfect, and neither of the fish has been put down. I therefore wade across the stream and exchange rods with Slender, who now tempts the big trout with the Royal Coachman I had placed on my leader, while I retire to my own bank to watch the casting. The Royal Coachman falls on the log itself and tumbles in a perfectly natural manner into the stream, and as it sails down is almost immediately taken by the big fish. With a strike which is as rapid as the thought itself and as firm and gentle as the hold of a Retriever on a wounded partridge, Slender is into her first trout and the fight is set. (See Frontispiece.)

The song of the reel and the bending of her rod show that the trout is boring downward and up-stream to his stronghold beneath the log. “Keep him out of there!” I shout, but Slender knows her work, and after a brief but anxious fight the fish gives up the attempt and bores out into the middle of the stream, where he leaves the water amid a glittering cascade, in a gallant attempt to escape

the hook. The rod is promptly lowered as the trout makes his jump and his tail therefore misses his objective, that is, the gut leader, and he darts down and across-stream to a shallow run, immediately below the spot at which I am sitting, and then comes to rest with a heavy side strain on the line and rod. I can see him clearly, a beauty of over a pound, as he swings his head and champs his jaws at the fly which I can see is protruding from his lower jaw. I cautiously slide down the bank and, getting out my telescopic fishing net, bring it from below the trout, up-stream, asking Slender to permit her trout to drop down into my net. Our speckled beauty, however, is by no means conquered, and taking the alarm darts away from the net up-stream, on my side of the river; thence, again leaping high out of the water, he makes an attempt to get back to his home quarters; this rush is so determined, and the gut leader so fine that he drags almost enough line from the reel to reach his lair. He has, however, not only to fight against the pull of Slender's rod, but against the current of the stream, and Slender, evidently fearing the dangers of the sunken log, checks him at the critical moment and walks him slowly down-stream, but her trout has another refuge in mind, and suddenly turns and bolts down-stream. Luckily he is well hooked and, though the line has of course slackened as he passes Slender, he does not succeed in getting the fly from his mouth. He now slips over a small fall and pulls up in the middle of a deepish water hole, some twenty yards down-stream, and is busily engaged for the next few minutes, in testing its various shadows for some harbor of refuge. The rocks are impossible for a

wader, and Slender cannot follow it down-stream; she has therefore to depend not only on her delicate play but on the soundness of her 4x leader. These however eventually triumph, and the trout is gradually drawn upstream and, after another rally in the quiet water, succumbs to the steady strain, and is drawn with his head well out of the water, towards Slender, who, keeping her rod well back over her shoulder, steadily guides him into her landing net, and comes across the stream to me with a justifiable smile of pride dimpling her cheeks. We promptly proceed to administer the "coup de grâce" with our priest. The trout scales in my creel show that the trout is seventeen ounces in weight, a brown trout of slightly over fifteen inches—a small well-shaped mouth and a brilliant colouring.

CHAPTER VIII

WET FLY FISHING—ITS ADVANTAGES AND ITS DIFFICULTIES

Wet and Dry Fly Fishing—Wet Fly Fishing Up-Stream—Striking—Arrangement of Flies on Leader—What Flies to Use—The Fly Problem—For the Wet and Dry Fly Fisherman—Hackle Flies—Wet Fly Fishing—Trout in Summer—Trout in Rapids—The Advantage of the Wet Fly in Rapids—Selection of Flies, etc.—Axiom in Regard to Bright Flies—Prismatic Colouring Under Water—Trout and Moving Insect Life—Wet Fly Fishing Up-Stream, Striking—Wet Fly Fishing Down-Stream, Striking—The Wet and the Dry Fly Fisherman—The Value of the Wet Fly in Lake Fishing—Lake Fishing and the Wet Fly—The Temperamental Side of Trout.

WET AND DRY FLY FISHING

IN both wet and dry fly fishing, you offer to the fish the food which you consider is most likely to excite its desire, and you try to present this food in a manner most nearly approaching the natural conditions in which it is generally observed by the trout. If the catching of fish be the principal object of fishing, then the greatest importance must be attached to that method of angling which presents food—or imitations of food—to the fish in a form and in a manner most nearly approaching the occurrence and the appearance of the food of their every day life.

During the course of the year, the food upon which the trout most commonly feed consists of worms, water shrimps, larval and pupal forms of insect life, and the drowned or partially submerged forms of flying or land insects, and as these only exist below the surface of the water, the most killing lures should be those which are

submerged, and which represent the above-mentioned foods. Hence it is, that the wet fly fisherman will always be with us, especially during the early days of the fishing season.

But the occupation of trout fishing cannot now be regarded as a means to earning a livelihood, but merely as a sporting pastime, which offers a relaxation to our worries and our cares, and presents a very pleasant and charming variation to the duties of life, and it is for this reason that those styles or methods of fly fishing which give the greatest pleasure, and which afford the keenest enjoyment with the least sacrifice of fish life, will be those which will eventually become the recognised methods of fly fishing with sportsmen.

Wading is almost imperative in open water, when wet fly fishing up-stream, and though this style of fishing may, during the earlier and colder months of the year, be more productive than dry fly fishing, it is not every one who cares to invite rheumatism, or endure the cold inseparable from wading during March or April.

When fishing up-stream with the wet fly, the line—which must be short—should, after the flies have touched the water, be kept straight. The tail flies should not, as a rule, sink more than a few inches below the surface, the first dropper only an inch or so, and the upper dropper should skim the water. The cast being made, the fisherman should take in the slack line as the flies come back with the stream. The rise of the fish is almost invariably seen, and success depends, therefore, on four things—the choice of flies, the fisherman's ability to throw a line and fish out his cast, his quickness in strik-

ing, and his knowledge of a trout stream. This method of wet fly fishing is not only highly successful, but far more interesting than fishing down-stream. Wading is almost a *sine qua non*, because the bank is too conspicuous a place for the angler; and this is the drawback of wet fly fishing, up-stream, for the line must, as a rule, be fished short, and the fisherman, having to use a short line, must of necessity be closer to his fish than in dry fly fishing. The greater the stream-lore of the fisherman, other things being equal, the greater will be his success. Rising fish will naturally attract special attention.

Wet fly fishing up-stream possesses many of the charms of dry fly fishing, and as a sport it comes next to it in scientific interest and pleasure. The object of jigging the wet fly when in the water is to imitate the action of the nymph or larvæ when swimming; the object of letting it float steadily down with the current being to imitate the drowned or motionless water insect. Hence, when the latter are not present, and the pupæ are being taken by the trout (any captured trout will readily solve this point), a series of little movements should be given to the drifting flies, by tiny jerks of the point of your rod as the flies come back to you. After a thunderstorm, when numbers of drowned sub-imago, etc., are coming down, the pupæ are not as a rule moving, and it is better to allow the fly to drift down with the current.

STRIKING

In wet fly fishing up-stream, the fly or insect at which the fish rises is assumed to be near the surface. The

motion of the fish, or perhaps the fish itself, can be seen, and the strike may therefore be made either at the time the rise is seen, or the touch is felt. When, however, the fly is well below the surface as in wet fly fishing down-stream, the first intimation the fisherman gets that a trout has taken one of his flies is the pluck or pull at his line. This pluck in itself is quite sufficient to hook the fish, and therefore, in so many as eight cases out of ten, the hooking of a fish with a wet fly down-stream cannot be claimed as being due to any skill or quickness in striking; while in at least eight cases out of ten the fish hooked with a dry fly, or a wet fly up-stream, may be fairly claimed by the angler as due somewhat to his skill in striking. In wet fly fishing down-stream an immediate strike, when the fly is taken by the fish below the surface of the water, is seldom advisable; and equally it is true, in wet fly fishing up-stream, that a strike is in nearly every case advisable when the rise is noticed.

ARRANGEMENT OF FLIES ON LEADER

When two, three, or more flies are being used, the question as to the best distance which should separate them is an important one. It is often advisable to use only a short leader and two flies when fishing up-stream with wet flies.

In wet fly fishing down-stream, a long leader should be employed, and more space can be allowed between each fly.

If the flies which are being used are of a large pattern, plenty of space should be allowed between each one, but this can be reduced as the leader becomes finer and the

flies smaller. In discoloured water, again, a shorter distance between each fly may be arranged, even when using a fairly large pattern of fly. In selecting the tail fly, I always think that the one most likely to attract the fish should be used, and the droppers—as the other flies are called—should be tied to the leader by two to four inches of gut. Single-winged flies should be used with a fairly stiff hackle. I think one gold-ribbed fly, at least, should always be used on a leader. Experience acquired on any particular stream, and the condition of the water, will be the best guide as to the arrangement, the size and the colour of the flies you place on your leader.

THE QUESTION OF WHAT FLY TO USE

If accosted, the average fly fisherman will be quite willing to explain not only the names of the flies he is using, but the best time to use them. He may, if further questioned, admit his lack of knowledge as to the families of the various water insects which his flies are supposed to represent, as well as his inability to explain the seasonal or other changes which take place in their appearance. But, it will not do for the beginner to think that the trout are equally ignorant, or as unobservant in regard to the appearance of the flying insects on which they feed, as may be this friendly angler, or, that it will be wise to remain equally uninformed.

VARIATIONS IN COLOUR OF FLIES, ETC.

Unless seasonal phenomena remain constant—no fly can be relied on to kill at any certain time, or on any particular day, or on any particular part of the river.

We may expect certain flies to kill at certain times of the day and season, and of course we take them in our fly boxes—but, it is impossible, unless by a fluke, to select the exact colours in which nature has, for its own good purpose, chosen to dress the delicate and elusive ephemeridæ on any particular day. Consider the varying shades of blues, the reds, the yellows, the grays, the olives, etc., in which the flying water insects are clothed, and which colours appeal to the attendant, not only on the varying meteorological changes of the day, but on the rapidly varying stages of their ephemeral life.

Trout—especially in clear water and in the fine weather of the early summer, when the first fierce hunger following the spawning season has worn off—do distinguish the most trivial^f differences in the appearance, the size, the colour, the scent, the movement, etc., of the flying insects on which they feed, and as a consequence accept or reject the lure presented to them, and therefore, in order to be successful as a fly fisherman, the beginner should devote both time and attention to the entomological problems of the waterside.

The varying temperatures of air and water, and the subtle meteorological changes which take place during the season, have an undoubted influence on the colouring of the wings, the bodies, the legs, the antennæ, and the caudal stylets, etc., of flying insects. It is not, then, so greatly to our discredit that we so often fail to select the exact patterns of artificial flies which will successfully represent the insects which haunt the waterside, and which—especially during the seasons when the water is low and clear, the weather warm, and the fish are both

well fed and frequently fished over—should be exactly duplicated if success is to be assured.

It is considered advisable, by many expert dry fly fishermen, to provide as many variations as possible in the dressing of the flies they use, in order to match the water insects which they may have to imitate in June, or July, or August, and although this means adding to the number of flies which have to be carried, yet, it often enables them to achieve a success which is denied to those who merely carry a few of their favorite patterns of artificial, or fancy, flies.

THE WET FLY FISHERMAN AND THE FLY PROBLEM

In the early and colder months of spring, when the fish are more numerous, when the insect life is less noticeable, and when the trout are impelled by their greatest hunger, the artificial flies may not have to be so carefully chosen, or so well made as those which are presented to the trout during daylight, by the dry fly fishermen, in the later months of the fishing season. Hence it is that the circumstances and the seasons in which men choose to do their fly fishing will very largely determine the advice they give, and the opinions they express, in regard to the important problem of the artificial flying insects which should be used as lures.

If it were possible for the wet fly fisherman to establish, beyond doubt, exactly what flies would secure the greatest attention when he reached the waterside, the problem would be a simple one. But, as his experience increases, he will find that his greatest difficulty consists in placing the correct flies on his leader, and it is this

difficulty which makes wet fly fishing by no means so simple a matter as it appears to the dry fly purist.

The appearance of the flying water insect varies in colour, in accordance with the prevalent meteorological phenomena, and it is as much from this reason as from any other cause, that no definite rules can be established in regard to the correct colour of the water insects, and consequently of the artificial flies, which will be found most killing at any definite hour, or during any definite day, on the stream he intends to fish.

Even with reference to the flies to be used in any one district or on any particular stream, the observant fisherman will find that his most established convictions will be shattered by some subsequent experience on the same water, and this, when every factor likely to contribute their influence to this problem has been identical with those factors on which these former convictions were based.

If the fisherman (wet or dry) can only discover the particular insect food which is attracting the attention of the trout, and can imitate such food by his artificial lure, he should, if proficient in fly casting, be assured of success.

The dry fly fisherman has, in this respect, a more simple problem to solve, than the one which the wet fly fisherman has to face. The former should be able to see the flying insect—which he has to imitate—both before and after it has alighted on the surface of the stream, and when more than one variety of flying insects are “up”—that is, flying or on the water—he can see to which particular fly the trout are paying the greatest attention.

Once this important fact be ascertained, he should, if properly equipped, have no difficulty in selecting from his fly box an artificial fly which, if properly presented, will lead to a rise.

The wet fly fisherman, however, lacking this important evidence—for he cannot see what is going on below the surface—must, to a very considerable extent, “chance his luck” by placing on his leader, at appropriate distances, three or more of the flies he *may consider* most likely to secure fish, and by varying them in size, in colour, and in appearance, and by presenting them to the trout in a manner which he thinks may characterize the movements of these insects when under water, he will hope to secure his fish.

He has, of course, his former experience to guide him in the selection of these flies. He may too, have the advice of his fellow fishermen, and he may, when he has succeeded in catching his first trout, determine what it has been feeding on, by examining the food which is to be found in its gullet. But whatever may be his selection, he will still lack the confidence which inspires the dry fly fisherman, who uses the fly, which he sees and *knows* the fish are taking, and thereby, as a wet fly fisherman, he misses one of the greatest charms belonging to dry fly fishing.

Assuming, however, that the wet fly fisherman has been lucky enough to select the lures which will prove most attractive to the trout, he has then to consider the depths below the surface and the individual movements, if any, which will characterize their appearance to the trout, under water, and endeavour, by some motion of

his rod, to sink his flies or to impart such movement as he may consider necessary, in order to imitate the motion of the water insects which are being carried by—or are travelling through—the water.

In ordinary weather, when the detritus of the countryside is not being carried down by freshets, the principal food of the trout consists of water shrimps, etc., the larval, or pupal, or dead forms of water insect life, etc., etc.

The water shrimp and the larval forms of insect life, etc., possess distinct and characteristic movements which will be more or less influenced by the swirls and eddies of the stream.

In the second place, the pupal or other motionless forms of water insect life will possess only the motion of the weeds, etc., which hold them in suspension in the water. It is recognized, therefore, by the experienced wet fly fisherman, that while some particular motion may be imparted to his lures at one time, at others any imparted motion should be avoided, and his flies or lures should be allowed to drift downward with the stream. It must be obvious that unless the fisherman be certain as to the water-born food on which the trout are feeding, he would be well advised to alternate his methods of fishing, and while at one time fishing deep, at another toward the surface, at one time giving a jigging motion to his flies, and at another time allowing them to float down-stream with as little added motion as possible.

Presuming, then, that the angler is able to determine the correct form of sub-surface food which he intends to imitate, and has placed these lures in the most suitable arrangement on his leader, he has yet to decide whether

it would be better to fish down-stream—*i. e.*, to throw his flies across and down-stream, or to fish up-stream, *i. e.*, throw his flies across and up-stream—and whether, in either case, his lures are to be made to resemble live and moving insect life, or dead or motionless forms of life.

In the down-stream wet fly method of fishing especially, his flies will be more or less out of sight after they have fallen on the water; the most useful and least fatiguing sense to use,—that of sight—will be out of action, and his sense of touch, a more difficult sense to keep on the alert, will have to be depended on entirely.

Fishing the wet fly, by casting it up-stream, requires a more deliberate and purposeful aim, a greater manipulation of the rod, a more direct and immediate action when striking, and possesses many of the charms of dry fly fishing.

HACKLE FLIES

In spite of the fisherman's handicaps, the game fish he is seeking to creel will have even more dangerous handicaps to encounter, and though in fine weather and in clear water the fish may have the advantage on his side, yet, when the water is thick and the light bad, even the inexperienced fisherman is likely to score, for his approach need not be so careful; his lure so wisely chosen; or his fly so skilfully thrown; and it is then that the hackle fly will be used with the greatest chance of success.

Probably the most important kinds of fly used, when wet fly fishing, are the hackle flies, with which, while no

direct attempt is made to define the differences in colour and appearance between the wings, the bodies, the legs, the antennæ, etc., of the flying insects, yet so dressed as to carry a general, rather than a minute, resemblance to the water insects which are either submerged or floating on the surface of the water. They may be so made as to represent, in fact, nearly every kind of food taken by the trout—ants, spiders, grubs, worms, water shrimps, dead or living pupal or larval water insects, etc.—and though, of course, such artificial hackle flies are varied in their colour and in their size, they are meant to represent every kind of floating food, as this is viewed by the trout, in the varying lights and in the more or less discoloured water. It is because of this all round usefulness that these flies have so many adherents. Many fishermen in Europe, and elsewhere, depend on hackle flies alone for the wet fly lures they use when fishing. But, however much such lures may be used in spring, in discoloured water, or in bad lights, it is impossible to ignore the fact, that—in fine weather and in clear water—it will be to the man who uses the most perfect imitation of the natural flying insect that success will come.

WET FLY FISHING

After the spring and early summer, as the water attains to a higher temperature, the larger trout will gradually drop down-stream to the deep and rocky parts of each river, and may be found where broken water and rapids occur in the deeper portions of the stream.

The fisherman, if he desires—as he should do—to creel these larger trout in July and August, should de-

vote very careful attention to the foaming eddies, the backwaters, and the rougher portion of his stream, for it will be in these well selected resting places that the large brown trout will be taken. The questions which will arise, therefore, are:—"How can these sheltering holes be best approached by the fisherman, and, what lures can be used to attract the notice, and excite the desire, of the trout they hold? As nearly every boulder in a rapid and fairly deep portion of a stream, or in a rapid itself, will possess some sheltered nook—either in front, under, or behind it—in which a trout can lie, submerged floating matter, such as flies, etc., will not only attract their attention, but possibly be seized by them.

If, then, these sanctuaries in the rapids be cleverly exploited, they should produce good fish to the wet fly fisherman, who should drop his flies down-stream amid the rush and foam of the rapids, and so that they will pass close to, over, or across, such holding places.

The dry fly fisherman may also, but in a modified degree, be able to use his dry fly with success, but, as he throws his dry fly from the foot to the top of the rapids, on his way up-stream, he will soon recognize that he is merely fishing "wet fly" up-stream—for his dry fly will surely be drowned—and that his chances will not be so favourable, as if he fishes these rapids with a wet fly down-stream.

Presuming, however, that he has, from the foot of the rapid, spotted one or two, or more, likely places among the turmoil of the waters which possess a likely spot sufficiently large and smooth to float a fly, he may, by carefully manipulating his dry fly in the up-stream,

method, obtain not only a rise in such places but possibly a big fish.

TROUT IN RAPIDS

The possibility of finding trout sheltering in rapid or dangerous water during the heat of a summer's day is a factor which should never be overlooked. When fishing such rapids for trout, and I now mean rapids which may be considered as being dangerous for the wading fisherman, a most careful study should be made of its backwaters, its eddies, etc., in order to discover the most likely holding places, and the best method of introducing his lures to the fish, and also, whether it is advisable to fish up-stream, or whether it would not be better to depend on fishing these rapids down-stream. Assuming that you are fishing up-stream and have arrived at, and fished, the run of the water immediately at the bottom of a long and interesting looking rapid, that you have carefully noted every likely looking spot up-stream which would harbour a fish in these rapids, and have decided how you can fish them most conveniently, when fishing "up" with a dry fly. You will soon discover, no matter how carefully you may oil your fly, no matter how short a line you may use, that your fly, after it is thrown on the rushing water, may be drowned in a very few seconds, and also, that it may be very hard for you to follow the passage of your dry fly when it has fallen on the surface, and extremely difficult to "spot a rise," or to know when a trout has taken your fly; but cast as well as you can—keep your fly as dry as you can and strike as soon as you can. It is better when thus fishing, to raise the rod as the fly performs its short

journey down-stream, and to strike with moderate force *directly* you lose sight of the fly. If you should happen to have hooked a fish in one of these strikes, you will most likely find the fish coming down-stream at no uncertain pace, and also, that it is a difficult matter to play and net a fish under such conditions and in such rough water. If you use your rod and reel correctly, however, it will be quite possible for you to keep your line taut, and guide the trout to the most favourable position for netting it. There will not be so many places which can be fished to advantage when thus fishing up-stream, and so, having disturbed the water as little as possible on your way up-stream, and having given careful attention to your casting at the very upper part of the rapids, you will be well advised if you continue to fish up the quiet water you have thus gained. Fish it out, foot by foot, most carefully with your dry fly, use your greatest skill when thus casting, and keep as much out of sight of any fish in this particular portion of the stream as possible—that is if you wish to obtain a rise, for this is the most difficult of all portions of a stream, and, for this reason: the water just above the lip or commencement of a rapid is seldom found to possess any safe retreat for a trout, and the fish who drop down to, or work up to, such a portion of the stream—being away from home—are naturally more alert and more easily scared than when they are within touch of their refuge, and therefore this particular portion of a stream has always to be carefully fished.

By fishing the stream immediately above the rapid very carefully, and having thus given the fish you have

fished over, on your way up, every chance of coming on the feed again, you can then, after changing your dry fly for one or more wet flies, proceed very carefully to refish every portion of this rapid, *down-stream*. I consider that in nine cases out of ten in *really rough water*, your chances of becoming attached to a trout will be far greater when you thus fish down-stream. The majority of trout will be found to be below, rather than above, the various boulders in the water you have to fish, and in most cases, you will be able to present your flies to them in a more natural manner and with greater precision, by dropping them slowly down-stream, and then bringing them slowly up, into, across and behind, the natural shelters formed behind or above these boulders. You will find that you have a far greater control over your flies, and will the more immediately appreciate the fact, *that* the trout *has* taken your fly. There will be, of course, an equally fair chance in favour of successfully netting your fish in both methods, but, if my endeavours to guide the fisherman to his attempt to capture the trout, which lie in these rapids, be of any value, it will be, because each individual proposition will have to be fished on its own merits. The determination as to which method, which fly, and which places have to be fished over will be problems which, if correctly considered, should lead to the best results.

When wet or dry fly fishing in a rapid, up-stream, the fisherman will have only a second or two in which to observe his floating fly, but he will remember that in the ordinarily rough water of a rapid, the trout lying in some secure refuge, well below the foam decked rushing

water of the stream, will have less time than he has. If such places are untroubled in his progress up-stream, his wet flies, as they are permitted to travel down-stream under the surface of the water, will have a far better chance of being taken, as they are drawn into, or sufficiently near to, these foam buried refuges, to attract some of the larger fish of the stream. Such trout are, moreover, mostly taken with a wet fly—they are less frequently attracted by a floating insect—but whether wet or dry do not falter in your fishing—cast and fish again, and again, if you wish for success.

Although it is easier, as a rule, to turn a trout out of his refuge and down-stream, when you are fishing up-stream, your chances of netting the said fish may be equally as uncertain. Trout lying on the lip of the rapids or even at some little distance below it *may* fight their way up-stream when they feel the prick of your hook, which is all to the advantage of a down-stream fisherman, especially so when he is standing above the top of the rapids.

The bigger and more dangerous rapids such as those at Sault Ste. Marie, or in other Canadian or American rivers, can be left alone by the ordinary fisherman, unless he likes to match his experience and his daring against the big fish these rapids hold, in which case he should use a salmon rod, large flies, and the strongest of tackle, and have a companion, who can swim.

SELECTION OF FLIES

It must be remembered that it is not necessary to educate a trout, in order to make it rise to, and take, an

artificial fly. The uneducated trout will rise more freely to any lure which appears to be a flying insect than will the ones who have learned, either through their own experience or from the warning conveyed by the actions of their fellow fish, that the appearance of the two-legged being on the river bank portends trouble to themselves, and also, they may—from sore experience—have discovered that this trouble is most commonly associated with the more or less natural appearance in their vicinity of flying insects.

In the matter of selecting your fly, or flies, remember always that unless you are endeavoring to imitate some definite form or forms of insect life—noticed by yourself as being on the water—your selection of the flies for the day should be based on some of the following factors. The weather, the light, the shades, and the colouring, noticeable in the water. A fly which may be too brilliant near the surface will have its vivid colours toned down if it be fished deep, and therefore, if you pin your faith to a fly which might be considered gaudy, fish it as deep in the water as you can during bright or clear weather.

A fly which is gray, neutral or sombre in its tone should be fished near the surface, especially in dark or threatening weather, for while colours are neutralized as depth is attained, the darker colours such as clarets, brown, deep reds, grays, duns, will gain in the value of their colouring the nearer they are fished to the surface. But in all and every use which is made of coloured fancy flies, the prevalent colouring of nature at the time and at the depths at which the fly is used should be consid-

ered, remembering that the valuable translucent iridescent effects are produced, in even dull flies, when the sun is approaching the horizon. The delicate colouring, arising from the shadow produced by wave motions, and accentuated by the reflections of coloured objects below the surface of the water, appears at times to assume a slightly concentric form, and when this form of colouring becomes conspicuously noticeable, fancy flies dressed with jungle fowl feathers, such as the Durham—the Saranac—the Moose—the Wilkinson, etc.—frequently become the most killing flies to use.

AXIOM IN REGARD TO BRIGHT FLIES

Fish the bright flies, deep, in bright weather, and fish the dark flies near the surface in dark days, ~~in the evening or at night.~~

PRISMATIC COLOURING, UNDER WATER

The prismatic shadings, thrown on objects at the bottom of clear water, are well known to those who have had to study the bottom of the sea or the bottom of rivers through a water telescope, and those who have had this experience will have noticed that these delicately coloured moving shadows—which are caused by wave motion on the surface—are intensified by the natural colouring of the underwater world. An English sportsman, General Baden-Powell, has introduced a series of salmon flies which are dressed with coloured gut fibres. An iridescent effect is produced, as the light breaks through these fibres, and this possibly accounts for the success which they have achieved.

TROUT AND MOVING INSECT LIFE

Trout are undoubtedly attracted more by the living, moving appearance of water insect life, than when these insects are motionless or dead. This tendency to leave motionless insect life alone will account for the number of insects in the pupal condition, which exists among the weeds, well on in the season.

Until the pupal masks begin to show signs of the metamorphosis which leads to their flying state, the trout generally leave them alone. Even the beautifully poised Ephemeridæ, as they float down-stream, will, under certain conditions of the light and weather, escape the notice of the trout; that is, unless these flies make some movement of their legs or wings.

An observer can frequently see certain flying insects poised motionless on the still water of a river or lake, apparently unnoticed and neglected by the trout. But if the fisherman will only take the trouble to watch these beautiful little creatures through a field glass, he will see that as they begin to move a leg or a wing a rise will occur and they will have disappeared.

Because of this partiality for food matter in a moving state, the wet fly fisherman is led—and led wisely—to try and imitate some of the swimming, or other, movements of the water insect life, and this he does by certain jiggings of his sunken lures.

However great may be the success of the dry fly fisherman, on a lake, at certain seasons and at certain hours of the night and day, a far more permanent success will attend the wet fly fisherman, on the same water, when

he fishes steadily, with a careful selection of wet flies, from hour to hour and from month to month.

THE STRIKE

The moment the rise of a fish at the dry fly is noticed the strike should be made, and by a strike the author means an attempt to drive the barb of the hook into the mouth of the fish, by moving the top of the rod.

If the rod be held, as it should be, in a position slightly above the horizontal, and if the floating fly be attached to a line, from which all slack has been taken in, as it floats back on the surface of the water, the immediate, but steady lift of the rod-top will be all that is required to pull the floating hook into the mouth of trout.

Flying insects are possibly the favourite and the most nutritive food for trout, but they exist as a food proposition in very much smaller quantities than the sub-aqueous foods on which lake trout mostly feed, and, as a consequence, the fisherman who fishes on lake water throughout the year finds it better to rely on the wet fly method of fishing.

Attached as I am to dry fly fishing, I think I should discard it in favour of wet fly fishing if I had to confine my fishing to lake water, especially if the principal object of my fishing, from the opening to the close of the fishing season, consisted in having to catch trout. But, as, I am thankful to say, my principal object in fishing is not the creeling of trout, I stick to my dry fly, impelled by the delight I feel in casting and in every other phase of dry fly fishing—which, I feel I am justified in consid-

ering, is the finest pastime in the world—and I can, therefore, wend my way home after a long day's dry fly fishing, cheerfully admitting the beauties of the world I live in, and thanking God for the privileges I have enjoyed during the day, even though the occasional rattle of the fly and sandwich box, in my creel, speak eloquently of its emptiness, in so far as fish on this trip are concerned.

WET FLY FISHING UP-STREAM, STRIKING

When fishing up-stream with a wet fly, your line will, of necessity, be a shorter one than when you are fishing down-stream, and therefore, after your flies have fallen on the water you should keep your rod point well down, gather in the slack line of each cast as the flies come back to you and directly you see a fish move near your flies, you should strike! If you allow your flies to sink much below the surface, you may fail to notice such a rise. After hooking a fish, keep a taut line, keep your fish as much above you as possible; give no license to your trout, hustle it if necessary, and get it into your net as soon as possible.

When the water is fine and clear, and when the fish are feeding on or near the surface, it is well to fish up-stream with a wet fly, and generally speaking, near the surface. But equally necessary is it to fish a wet fly fairly deep in the water, in other circumstances.

DOWN-STREAM, STRIKING AND NETTING

When wet fly fishing down-stream, it is not necessary to strike, in the strict sense of the term. If you see a fish

move near your flies, or feel a pluck, tauten your line rather than strike, or you may possibly drag your fly out of the mouth of the trout. In other words, keep a taut line and allow the fish to hook itself. A wet fly fisherman, when fishing down-stream, will hook his trout below him, and as the fish will have the force of the current in its favour, and is generally hooked on a long line, it is advisable to get down-stream to the trout as soon as possible, reeling in your line with the rod point held well up-stream, or the fish may succeed in breaking the leader or tearing the hook out of its mouth. When you are getting on terms with your fish, keep well out of sight; draw it to the most convenient position for netting—if possible well out of the current of the stream—then produce and advance your net well below the surface of the water, and guide your fish over it, and lift it out.

WET VERSUS DRY FLY FISHING

Although a wet fly fisherman may envy the success of a dry fly brother fisherman; although he may disdain his methods and dislike his opinionatedness; *he may*, if he probe into his brother angler's experience, find—to his surprise—that he of the dry fly possesses as sound an experience in matters pertaining to wet fly fishing as he does himself, and has a vastly greater general experience than himself. That beginning at the childhood's capture of a minnow with a worm tied on to a thread, and culminating in the furious life and death struggle with a tarpon or tiger fish, the dry fly man may possess an experience so great, that he of the wet fly—being a

good fellow—may have to alter his estimates and possibly to make a more careful consideration of the merits of dry fly fishing, which as a sport he has ignored.

It is certain that when once this rubicon is passed, and after he has changed his wet fly outfit for a dry one, and turned his head up-stream, he will find himself in such a new and delightful realm of sport, that his one surprise will be that he has remained for so long a devotee of the wet fly. Later on, he will as soon think of returning to the sunken lure method of fishing in June, July, August, etc., as would the followers of Joshua, after bathing in the cooling waters of the Jordan, and living on the milk and honey, the grapes and the figs of the land of Canaan, have thought of returning to their "Manna" in the desert sands of Arabia.

THE VALUE OF THE WET FLY ON LAKE WATER

Lake trout depend on sub-surface food, during the year, to a greater extent than they do on surface food. This is the more noticeable when we compare their feeding habits with those of the trout which inhabit our streams. The factors which are responsible for this difference are well worth consideration—for they have a very considerable bearing on the artificial lures which should be used by the fisherman, and explain the greater success which will, as a rule, attend the use of the dry fly on our streams, and the wet fly on our lake waters, even if, area for area, the lakes and rivers harbour an equal number of water insects—the final stages of whose existence are passed in a flying condition. We know that these flying insects seek shelter of the foliage on the

banks of the waters in which they were born, and also, that a far greater number of these flying insects hover about the banks and deposit their eggs on the surfaces of the streams than they do on the surfaces of the lakes.

The difference in the quantity of flying foods reaching the fish in the lakes and in the streams is partially due to the comparatively smaller lineal extent of the banks, the different character of the foliage, and the lesser denudation of the banks which confine the waters of the lake.

The shrubs, the foliage, and the grasses which cover the banks of our streams, both in their growth and in their character, possess greater entomological advantages than do the trees, shrubs, etc., surrounding the lakes. The banks of the rivers and streams afford a better refuge, give a greater shelter, and constitute better breeding places for a greater variety of life, and, finally, we know that the flying insects, in their imago or spinner state, deposit their eggs on and over the surface of the streams which pass by the banks on which they congregate, but they do not deposit their eggs at any great distance from the shores which surround the lakes.

The streams, then, are favoured to a greater extent with the important results arising from the meeting, at the spinner period, between the different sexes of water insect life, and a result will be supplied with a much more varied and numerous profusion of flying insect life than will the lakes.

Thus while lake trout may have, in other respects, as plentiful or even a better food supply than the river trout, the river, if well situated, etc., will be enriched

during the fishing season by a more regular supply of flying insect food, and, consequently, will offer to the dry fly fisherman a much more interesting and extended field for his art. In other words, while only the edges of the lake will profit by the nuptial duties of its spinners, etc., and make their returns at the proper season with but a small proportion of flying insects, the whole area of the streams, if their environment be favourable, will be naturally more prolific in their production of flying insect life.

While many lakes may be benefited by the larval or pupal forms of insect life, and by the detritus, brought down from time to time by its streams, such water-borne visitants are expected, and eagerly taken by the lake trout, and do not add, therefore, in any material extent to the numbers of the sub-imago which later on emerge from its waters.

It is of paramount importance for the dry fly fisherman to remember that he will catch fish only when he can induce the fish to feed; that he can get them to feed only when he offers them the food they want, and that with a presentation so natural as to deceive them. This he cannot hope to do, unless he has some knowledge of the entomology of the lakes and the streams on which he fishes.

He must also remember that if a river or stream be not cool, plentifully supplied with natural shelter and with an abundance of insect life, the tendency of its trout will be to drop down-stream, at the end of the spawning season, to the cooler water of the lakes and to the more abundant food supply which will be found

there. This exodus of trout is common wherever large and cool lakes exist, but has never been more fully illustrated than in my experiences when fishing the northern shores of Lake Superior in 1910. Fishing from a motor vessel, provided for me by the Canadian Pacific Railway Co., and canoeing from it, up the various rivers running into the lake from the North—I found, that these rivers were comparatively deserted by the trout, though there were some to be found in the vicinity of any cold springs which rose in their channels.

Even when fish were so found, they afforded but indifferent sport, but I found that in the reefs and rocks—which abounded—along the shores of the lake in the vicinity of each river, I met with an abundant supply of trout of large size and of magnificent fighting character, which when the breeze was off shore came eagerly to my dry fly.

The rivers, if any, which run into a lake carry down a very large quantity of the food the lake trout live on, while the weeds, the varying temperatures of the lake, so influence the numbers of the water shrimps, the larval, the nymphal, and flying forms of water insect life, that the localities in which the average sized lake trout are to be found vary very considerably, the trout in their nomad lake existence roaming from one place to another, and it is sometimes difficult therefore for the fisherman to determine the best portion of the lake in which to fish. A strong wind, blowing steadily from one quarter, will deposit, according to its strength, a greater or a lesser number of flying insects, either near the weather bank, in the middle of the lake, or perhaps near its far-

ther shore, and where this occurs, then there will the trout most probably be brought together on feeding intent. Even when the locality of the trout is thus discovered, on any one day or at any one hour, variations in conditions of the stream, or in the direction of the wind, will speedily cause an alteration in the position of the trout. It must not be forgotten that though the position of a number of lake trout will thus be determined, there will be other trout, possibly the larger ones, who have not left their quarters, or even been induced to come on the feed.

River trout, on the other hand, are never so difficult to locate, as they can be found in the most favourable position, generally near some secure retreat, so that their food is brought, either by the wind or the current, within their reach. They only vary their position from one portion of the stream to another, or from one to the other side, as alterations in sunlight or in the wind, etc., takes place.

Unless, then, the fisherman be fishing to a rise, his fly must be thrown,—either on a lake or on a stream—to the position which experience teaches him is one in which he may expect to find the trout.

When dry fly fishing on a lake, even when throwing to a rise, it is expedient to allow the fly to float on the surface as long as possible. In fact, for so long as buoyancy permits the fly to remain on the surface, it should be kept there; in order to give the fish who may be moving about, or perhaps are sluggish in their rise, the best possible chance of noticing it.

LAKE FISHING AND THE WET FLY

Lakes and ponds which are poorly fed by rivers, springs, etc., lose a certain amount of their oxygen and life-giving properties, and the fish and the insect life which inhabit them suffer as a direct consequence. Nature generally corrects this evil by the aid of a breeze, the waves and ripples of which, oxygenating the lake water, bring vigor and appetite to the life which inhabits it. Incidentally, the breeze may spoil the surface of the water for dry fly fishing, but its influence will most assuredly help to fill the creel of the wet fly fisherman. When many flying insects are in the air, these will be carried on the water by the breeze, and as they alight on its surface the trout may be seen feeding on them.

When a stream is bringing down a considerable quantity of water insect food, and when there is no metamorphosis taking place, from the larval or pupal state into that of the flying state, the trout in a lake will, generally speaking, be found feeding from fifty to three hundred or four hundred feet from the place where such a river enters it.

The gathering of the trout to one portion of the lake may also be observed when the water of such a stream has a cooler and more oxygenated character than the water of the lake itself. Even though no movement of the fish may be noticed, it is well to fish the lake carefully in, or about, such a vicinity. If there is an opportunity of looking down into the lake from some highland, situated near the entrance of such a stream into the lake, the exact position of this grouping of the fish may be observed.

THE TEMPERAMENTAL SIDE OF TROUT

Meteorological as well as seasonal phenomena appear to affect fish temperamentally. At times, and for a short period, they will appear to lose not only their alertness, but their appetite, and thus when they are caught they fight indifferently.

Apart from the passing ailments caused by natural conditions—the falling off in the conditions of a fish may be brought about by deleterious matter finding its way into the waters they inhabit. This may not always be due to bad drainage or to other preventable evils. I recall that after the volcanic disturbances in New Zealand in 1903, the trout in Lake Taupo decreased in size, in weight, and in condition. I discovered that this unhappy state of affairs was due to the sudden occurrence of springs, carrying a large percentage of sulphur, which—following the seismic disturbance—suddenly came into existence in the bottom of the lake. I am pleased to be able to state that this evil has gradually disappeared and the trout fishing in Lake Taupo has now recovered its former excellent qualities.

While fishing in Canada in 1910, I discovered that a somewhat similar evil was evidently afflicting the trout in one of the streams running into the Bow River above Bulth. The sulphur, in this case, came from a spring which was forming a pond, and thence finding its way into the main stream I was fishing. During the spring months, the floods must have carried a certain number of brook trout into this pool. I noticed their condition and caught two of them, which, with others, had been

unable to escape. I found them to be in a very poor and discoloured state—a condition which I had noticed, though in a slighter degree, as affecting the river trout I had caught while fishing the stream, just below the place where the sulphur spring seeped in. As I fished on above this sulphur spring, I found the trout to be in their naturally healthy condition.

When, therefore, the fish in any water are found to be falling from their former healthy condition, it would be advisable to examine closely the water of the stream, and endeavour to discover whether any similar influence is at work impoverishing the fish.

In an investigation made on the Castalia Trout Club water, Ohio, in August 1923, I found and reported that the trout were affected at times, and to a very considerable extent, by the powdered limestone from the neighbouring cement mills, and that when the wind blew from these mills it brought this fine powder and deposited it on the stream—the fish almost immediately going off their feed and disappearing in the deeper holes—the chemical action which followed having interfered with the condition of the surface water. The trout did not return to their feeding condition until sometime after the effect of the powdered limestone had disappeared.

THE TEMPERAMENTAL INFLUENCE ON TROUT

In respect to this temperamental condition in the life of trout—Do we not often hear some brother angler describe the capture of some good sized trout which he has brought home in these words, “Oh, my dear fellow, he gave me no sport at all; he came in like a chub or an old

pike"? One hates to hear an expression of this sort about the temporary conditions of the fish we love, although such conditions are but too well known to all of us. I have experienced at different times, and in varied portions of the globe, so much that is good and sporting in chub, in the pike, and in the carp family, that a simile decrying these fish does not seem to me a perfectly fair one. Can we ever forget the ten-pound golden carp at "Little Cot Junction" near "Hermanas" in South Africa, which we killed on our three ounce "Leonard" rod, while we waited for our coach to Hermanas; this same fish having recently broken the tackle of the most experienced fisherman in South Africa? Can we ever forget the fifteen-pound pike which we killed when a boy, fishing with a minnow on a single hook, one winter's afternoon, in a strongly running portion of the Hampshire Avon, or the seven-pound chub which took our dry fly on the Irfon in South Wales in 1906, and who fought as great and as determined a battle for over twenty minutes as any fish we ever creeled; can we forget the struggles with the Carnatic Carp or the Mah-seer of India, or its equally sporting relative, the Yellow fish of the East coast of South Africa?

CHAPTER IX

KNOTS USED IN TROUT FISHING

The Half Hitch—Overhand Knot—Sheet Bend—Double Sheet Bend, etc.
Droppers—Attaching a Fly to the Leader—Large Flies—Joining Gut—
Splicing a Rod—Whipping a Rod, etc.

HARDLY a book on fishing has been written which has not dealt with the subject of the knots which are used by fishermen when fastening the line to the leader, fastening two parts of a broken leader together, attaching a dropper to the leader or the gut to the hook. It is, however, desirable, while treating this subject fully, to do so in as simple a manner as possible.

The overhand knot is the easiest of all knots (see Diag. 9, Fig. 3) and yet it is one on which practically all other knots are based. The best method, in my opinion, and the one I recommend for attaching an end of gut to an eyed hook (see Fig. 2), is to pass the end of the gut through the eye of the fly, and then to form an overhand knot round the unthreaded portion of the gut, so that the end lies alongside and pointing up the leader, away from the hook. (See Diagram 9, Fig. 2, and Diagram 10, Fig. 4.) The overhand knot thus made is drawn tight and is then pulled down towards the eye of the fly, and its end cut off. (See Diagram 9.)

This forms the safest knot which can be used on small flies, and is the one which I have used and advocated for many years to all whom I have coached. In the patent fibres which are now being sold in place of gut this over-

hand knot should be made with two instead of one turn to its end. This fibre appears to me to possess many advantages, but one of its disadvantages is that when

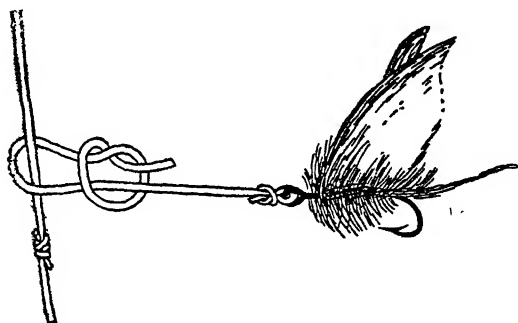


FIG. 1.



FIG. 2.



FIG. 3.

DIAGRAM 9.

FIG. 1.—Method of attaching dropper to line.

FIG. 2.—Overhand knot drawn taut on the eye of hook.

FIG. 3.—Overhand knot loose.

wetted it becomes very soapy, and unless some precautions are taken the knots made in it will slip.

There is a knot which is known to the sailor as the half-hitch, which is shown in Diagram 10, Fig. 6. If this half-hitch is slipped down over the eye of the fly, and drawn taut, the knot shown in Diagram 10, Fig. 7, results. If this knot is used with small hooks, or ones in which the wings are close to the eye, it is a difficult matter to avoid injuring the wings of the fly. It will be seen by Diagram 10, Fig. 7, that the end of the line will

lie down close alongside the body of the fly. The disadvantages of this knot, however, are, first, the difficulty of securing it to the hook without injuring the fly,



Fig. 4.



Fig. 5

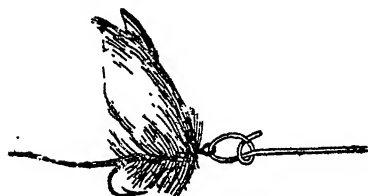


Fig. 6.



Fig. 7.

DIAGRAM 10.

FIG. 4.—Overhand knot tied round unthreaded part of cast.

FIG. 5.—The same slipped over eye and drawn taut, forming the sheet bend.

FIG. 6.—The half-hitch.

FIG. 7.—The half-hitch after it is slipped over eye and drawn taut.

and, secondly, that the fly cannot move independently of the gut to which it is attached, as it does in the knot which I recommend. If the eye of the fly should be made of gut, as the eye of a salmon fly frequently is, the overhand knot shown in Figure 3 can be slipped down while loose, over the eye, as shown in Figure 4, and drawn taut, the result of which is shown in Diagram 10, Fig. 5, and is known to the sailorman as the "sheet bend." Where patent fibre is used with the gut eyed salmon

hooks, a small knot should be made in the end of the line, which will prevent the fibre from drawing, or, in the case of gut, the end can be passed again round the shank of the hook and under the part which runs through the eye. This is called a double "sheet bend" by the



DIAGRAM 11.

Showing a method of using the overhand knot for large flies.

sailorman. This knot, in my opinion, is a fairly good one for the wet fly fisherman, but a bubble of air is frequently retained by the short end above the eye of the hook, which gives an unnatural appearance to the artificial fly.

For hooks larger than No. 14, the overhand knot can be made round the threaded part of the gut, after being brought round the unthreaded part. The knot is then drawn taut, and the end cut off short. The noose thus formed is drawn taut on the unthreaded part, and is then pulled down, so that the knot thus made slips down to the eye of the hook.

If two ends have to be joined, an overhand knot is tied in one end, and the other part passed through this knot, and then tied in an overhand knot round the other part. (See Diagram 12.) Notice how the ends come out. All that remains to be done is to draw these two over-

hand knots taut on the piece of gut they enclose, and then draw the two knots together. This makes the neatest of all joins, but for additional security, and so that the end of the gut can be cut absolutely short, a second turn of the end can be made in each overhand knot before it is drawn taut.

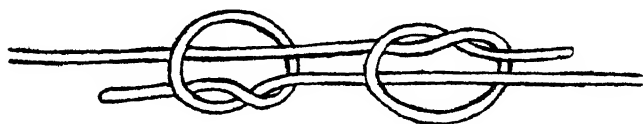


DIAGRAM 12.

Showing the method of joining the ends of two pieces of gut with overhand knots.

When attaching a dropper to a leader, the best way is to make a fairly large overhand knot in the short end of gut attached to the fly, and to pass the fly through this knot, enclosing the leader in the loop thus formed. The overhand knot is then drawn taut, and the loop is then placed at the spot at which the dropper has to hang, the loop closed by pulling on the fly, and the end cut short off. (See Diagram 9, Fig. 1.)

The best method of fastening your line to the end loop of the gut cast is to thread the end of the line through the eye, bringing it round both parts of the eye, and slipping it underneath its own part. This again gives the "sheet bend" (Diag. 10, Fig. 5). A small knot in the end of the line makes this "sheet bend" absolutely secure, and permits of an attachment which can be instantly released.

THE BROKEN ROD

The fisherman is likely at some time or other to fracture or spring the upper or middle joint of his fishing-rod, the handle of his fishing-net, etc.

If he should happen to meet with this misfortune, he can with very little loss of time and without difficulty repair the most serious fracture or injury.

The best plan to adopt to meet such emergencies is to have in your creel a roll of quarter-inch adhesive plaster and a few strong quills. By splitting the quills and opening them out they can be used as splints, and with the adhesive plaster will effectually repair the broken rod.

If the rod be a cane one, it will not be likely to break, but merely to spring, most often in two or three segments on one side. In such a case, place two quills on the weaker side of the rod and one on the other. These, combined with a good strong whipping of the plaster, will render your rod perfectly fit for use. If you care to make a neater job when you reach your fishing quarters at night, a little hot water will loosen the plaster, and you can then make a more perfect mend of the break, sufficient indeed to last until you see your rod-maker again.

It may be necessary to place more than one layer of the quills on the rod, but as they fit closely together and are very light, they do not interfere with the pleasurable use of the rod. The quills can be softened by soaking them in hot water.

If you have not broken a part of your own rod, others may not have been so lucky, and you can help them,

and, as the vagabond father of Huck Finn said, "a good action ain't never forgot."

The value of this method of splicing or fishing a rod is

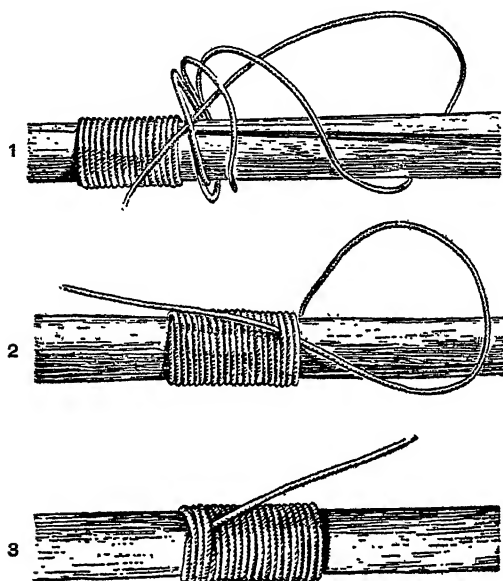


DIAGRAM 13. SPLICING THE ROD

1. Passing the end through the loosened turns.
2. These turns drawn tight.
3. The slack line pulled through.

that it is usable directly the plaster whipping has been applied.

HINTS—WHIPPING A BROKEN ROD

When adhesive plaster is not obtainable, the whipping should be made with strong waxed thread or silk, and finished as the whipping at the end of a rope is finished by sailormen. The first few turns are made at the desired spot, laid evenly and firmly over a short end of

the whipping material, and continued, until sufficient turns of the thread have been laid on to cover the injured portion of the rod. The last three or four turns are then loosened freely, and the end of the line with which you have been working is passed under these, and up and laid over the turns which have not been loosened. The loosened turns, beginning at the inside one, are then again drawn on taut, and the slack line is finally pulled through under them, and the end cut off. The whipping thus finished securely is the most convenient method of placing a whipping on a rod. (See Diagram 13.)

CHAPTER X

WATER INSECTS

A Favourite Fly—The Selection of the Fly—The Ephemeridæ and Other Families of Water Insects—Ephemeridæ—How to Distinguish These Families—Their Respective Existences Below and Above Water—The Trichoptera—The Perlidæ—The Sialidæ—The Deptera—Natural and Artificial Flies—Fly Boxes—Different Flies and When to Use Them—The Fancy Fly—The Evening Rise—The Rise, Its Causes—Bulging Fish—Entomology Bearing on Artificial Flies—Fancy Artificial Flies—Environment and Colouring of Flying Insects—Colours Under Water—Fidelity in Colouring and Pattern—American and British Artificial Flies—Miss Mary Orvis Marbury—Selection of Fancy Artificial Flies—Mr. Charles F. A. Phair and His Flies.

A FAVOURITE FLY

A FISHERMAN will find it difficult to forget the success of a certain fly, on one or more memorable and golden days of fishing.

The admirable imitations of the flying water insects, which have been produced and are used by dry fly fishermen, will convince anyone who has studied the question, that in no other sport are the appliances used found to equal or even approach the beauty of the artificial flies which are used in fly fishing.

If, after careful consideration, we select a fly from our treasured fly box which we think will happily represent the flying insect we have just spotted, as also as being the one on which the fish are feeding, this deliberate choice, if successful, becomes personally endeared to us.

In choosing it we are backing our own judgment as against other chances and we, therefore, take a keener sporting interest in the success of this specially chosen

fly. We cast it with more confidence and with even greater skill and zest, and the chances are, therefore, that we shall succeed with it, even when a better fly might possibly have been chosen.

This freedom of selection lends a charm to each cast we make, and we double our pleasure with each success. I enjoy casting with the fly I favour—even if I am not so successful, as I should be, if using a fly whose size and appearance appeared alien to the insect life of the river on which I am fishing.

THE SELECTION OF THE FLY

The most critical decision of a day's dry fly fishing is that which centres round the selection of the artificial fly. The varieties of the fly to which the fish may rise are many, but the times at which any particular one of these flies may appear are uncertain, and there will always be this uncertainty as to the size or colouring of the fly which will be taken at any moment by the fish. There may also be variations of much importance in the size, colour, and appearance of the different hatches of the same family, and to be successful under ordinary circumstances, the greatest care should be exercised in determining this point.

Take the May fly, as an instance, and consider the very great variety in the size, colour, and appearance of these ephemeridæ. Each season, nay—each day, nay—each hour of a May fly season, may produce a variation in its flying insect, which it would be well for the fisherman to note. I had recently sent to me, by Mr. Cummins of Bishop Auckland, a sample box of May flies in which

there were fifty-eight distinct patterns, and, varied as they were in colour and size, I did not see one which did not recall some specimen of May fly which I have seen or used in the different waters of the Northern Hemisphere.

A May fly of some particular colouring and size may establish a premier position, as a lure, during any one season, in any one district, and yet be almost useless the following year on the same water. These water insects are protean in their colouring, and their changes of colouring are protective; but of one thing the fisherman may be certain, that no attention can be too immediate to give to the exact size, colour, etc., of the fly or flies which are to be seen on the water he is fishing. No matter how killing a fly may be at any one minute, a sudden rise of the fish will occur at some other variety of fly, during the next. Directly the fisherman recognises that his fly is unnoticed by a rising fish, his rod should be discarded in favour of the fly net, and each floating or flying insect should be captured and carefully examined. Say, that you have been fishing with an Olive Quill which has been killing well, and though the fish are still rising, the Olive Quill fails to attract their attention; you should take your fly net out of your creel and get right down to the waterside, and if you allow the dainty yacht-like ephemeridæ which comes sailing down to you, to float into your net and be then examined, you will see it is an Olive Quill. Here comes another one, which turns out to be a Ginger Quill, again another Ginger Quill, and see just ahead of you the ring on the surface of the water made by a trout

which has taken another Ginger Quill. This is good enough, you must, therefore, get out from your fly box an artificial Ginger Quill similar in size to the flies you have just caught in your net, take off your Olive Quill and substitute the Ginger Quill in its place, now oil the fly. You have put too much oil on the fly, so squeeze the wings flat between the finger and the thumb in your handkerchief, and when you cast again you will find yourself once more into a fish.

It will thus be seen how important it is to have some sort of a fly net in which to capture these elusive and delicate flying insects, for it will enable you to gain the information you require as to any hatch of flying insects—and thus to select quickly and correctly the right fly to fish with.

THE EPHEMERIDÆ AND OTHER FAMILIES OF WATER INSECTS

The following remarks on the appearance, the metamorphoses, and the lives of the flying water insects which form so important a portion of the food of trout will prove of interest as well as of service to the fisherman.

The dry flies used by the trout fisherman are made to represent, as nearly as possible, the appearance of the winged stage of certain families of water insects, known to the entomologist as: The Ephemeridæ, the Trichoptera, the Perlidæ, the Sialidæ, and the Diptera. In order that the student may be able to tell to which of the above five families the flies he catches in his butterfly-net belong, it will be necessary to remember the fol-

lowing characteristic position of the wings of the flying members of each family, when the fly is alive and at rest.

The Ephemeridæ.—The wings rise upward from the shoulder in vertical planes above the body, generally touching each other as they rise from the body, and when floating down-stream these delicate insects can easily be recognised; their wings are like the sails of a fairy yacht afloat on some dreamland sea. (See Plate XVI, Figs. 2 and 4.)

The Trichoptera.—The wings run backward from the shoulder, and lie alongside the body, meeting, tent-shaped, at their upper edges, and gradually diverging in the posterior direction. (See Plate XVII, Fig. 4.)

The Sialidæ (the Alder).—The wings of the members of this family are carried in a similar manner to those of the Trichoptera, but the family is a smaller one. (See Plate XVIII, Fig. 4.)

The Perlidæ.—The wings are placed in a flat position, running backward from the shoulder in horizontal planes, and crossing or overlapping one another over the body. (See Plate XVIII, Fig. 2.)

The Diptera.—The wings generally, like the Perlidæ, are placed in horizontal planes; in most cases they do not overlap, but diverge from one another, as in the common housefly.

Besides the above mentioned varieties, there are over 200 different species of water beetle, the numerous family of the Notonectidæ, besides their larvæ, etc., upon all of which trout feed; and, therefore, the wet fly fisherman may well imitate many other forms of sub-aqueous life.

Before describing the separate existence of the insects of these different varieties, it will be well to remember that we are principally indebted to the British for the artificial flies which represent the different flying members of these four families, and that until there should arise an American entomologist or a school of naturalists who will place the entomology of our trout streams—in so far as they concern the fly fisherman—on a basis comparable to that which has been established in Great Britain, we shall have to accept the British entomological standards as being those on which to base our everyday experiences. When our scientists add to our knowledge by a close study of the water insect life which forms so considerable a portion of the food supply of our trout, they will not only greatly benefit us, as fly fishermen, but will add and enrich the great work already done by American entomologists. Such a study will result in an immediate advance in the pleasures of scientific dry fly fishing.

THE EPHEMERIDÆ

The sub-aqueous existence of one of the Ephemeridæ occupies the greater portion of its life. From the period at which it leaves its egg until it becomes a flying insect, it is undergoing a gradual metamorphosis, and, like the Perlidæ, at no time does it assume the real pupal condition—that is, the dormant chrysalis stage—common to the Trichoptera, Sialidæ, and the Diptera.

It should therefore, strictly speaking, only be alluded to as being in a larval condition until it becomes a sub-imago, but for distinction the latter period of its larval

condition may be termed pupal. It is at about this latter period that it begins to be of most interest to the fly fisherman. I have given in Plate XVI, Figs. 1 and 3, two characteristic views of the appearance of two different specimens of this family just before the sub-imago state. Fig. 1 illustrates the pupal stage of the larva of the May fly, *Ephemera vulgata*, twice its natural size. Fig. 3 represents the pupal stage of the larva of *Cloëon rufulum*, a fly resembling the Red Quill. Fig. 2 shows the *Ephemera vulgata* in its flying stage with the wings open. Fig. 4 shows the *Cloëon rufulum* in its flying stage with its wings closed. The larval period of the different Ephemeridæ lasts either one or two years.

There are several varieties of the larvæ, corresponding to the several kinds of Ephemeridæ, and in each the appearance and the habits differ—some crawl, some burrow, and others, again, swim—but in all the varieties the larval appearance alters as they attain full size, and beneath the transparent integument covering their bodies can be discerned the gradual development of the wings, thorax, and legs, which will be used after the metamorphosis to the flying condition. (See Plate XVI, Figs. 1 and 3.)

When the larvæ are fully ready for this change, they leave the haunts in which they have hitherto spent their existence, and swim to the surface. When there the mask-like membrane, under which the wings, etc., have been visible (see Figs. 1 and 3, Plate XVI), splits open, and, supported on this shell as on a raft, the insect gradually frees every part of its body and unfolds its wings. As soon as these wings are dried, and the body is clear

of its shell, the sub-imago, as it is now called, flies to the nearest bank, where it shelters itself amid the grasses, leaves, etc. It is commonly known in this state as a dun, and it appears at various times, when the weather is favourable, in the vicinity of the water during a period of from one day to two or more weeks, flying with the breeze, generally down-stream. In this stage of its life it can be easily recognised by its comparatively heavy, drifting flight, and its dull, semi-opaque appearance. By the aid of a watchmaker's glass, cilia will be seen covering the surface, and forming a fringe to the posterior margin of its wings.

The sub-imago stage of its life, which is very brief in some cases, is finally forsaken when the entire membrane of its body and wings again splits open and is discarded, and the insect then assumes its perfected stage as the imago or spinner.

It is now fully matured and enters into its bridal existence, which lasts but a few days. In this stage it is to be seen in great numbers when the heat is not excessive and during the evening hours. Its wings are now gauzy and its body lighter and more brilliant in colour. It is easily recognised as it soars, floats, and sinks in the ambient summer atmosphere.

The following are the popular names by which some of the forms of the Ephemeridæ are known: Olive Duns, Duns, Blue Duns, Autumn Duns, Blue-Winged Olives, Iron Blue Duns, Red-Quill Duns, Red Spinner, Jenny Spinner, May-fly, March Brown, Iron Blue, etc.

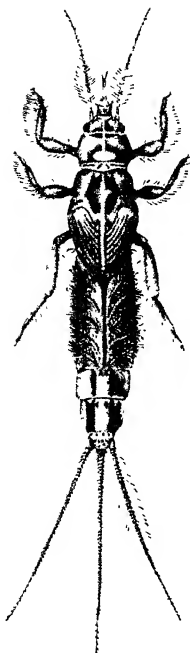


FIG. 1. *Ephemera vulgata* (May-fly), twice natural size, ready to assume its sub-imago or semi-final flying existence. Note the wing as seen under the pupal mask.

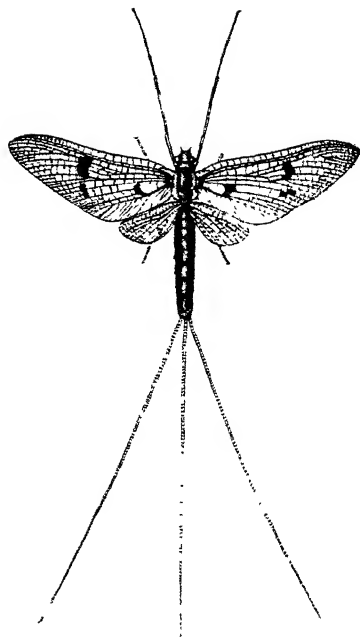


FIG. 2. Flying state of *Ephemera vulgata*.

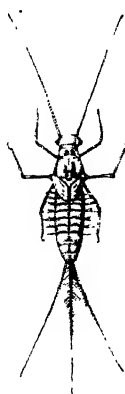


FIG. 3. *Ephemera, Cloëon rufulum*, twice natural size, ready to assume its sub-imago existence. Note the wings.



FIG. 4. *Ephemeridæ Cloëon rufulum*. Flying state. Magnified

THE TRICHOPTERA, OR CADDIS-FLY

These insects, unlike those of the Ephemeridæ and Perlidæ family, undergo a distinct metamorphosis during their sub-aqueous existence.

The Trichoptera may be divided into two families. The larva of one, after leaving its egg, spins a cylindrical sheath round itself (see Plate XVII, Fig. 2), which forms its future home, and to which it attaches small stones, sand, wood, etc.; these cover and mask this case, and at the same time act as ballast. The case thus forms an armour-like protection against enemies. The larva uses this sheath as a movable residence, and from the open end its head, thorax, and legs protrude and provide the motive power, the weak and maggot-like body (see Plate XVII, Fig. 1) being always enclosed and protected by the armour-clad case, which it drags about from place to place. After various enlargements to suit the growing conditions of its body, the larval insect partially closes the open end of its case; it then commences its pupal existence—*i. e.*, it becomes a chrysalis, and finally, when the chrysalis stage is over, it tears open the *sac* covering which has protected it during the dormant existence. Swimming to the surface, it either supports itself against some floating object or makes its way to the bank. The skin then splits open and the insect enters directly into the flying stage (see Plate XVII, Fig. 4), the pupal skin being generally left in the water.

The larva of the other family of the Caddis-fly forms its home by spinning a *sac*, like a bag, attaching it to some sheltered spot, and covering it with stones, etc. It

leaves this home in search of food, and when the pupal stage approaches, it partially closes the aperture and undergoes a pupal phase similar to the one above described, before it assumes its imago existence. Some well-known forms of the Trichoptera are as follows: The Red Sedge, Silver Sedge, Orange Sedge, Grannom, the Welshman's Button, the Cinnamon-fly, the Sand-fly, etc. In Plate XVII will be seen two drawings of the larva and the pupa of the Caddis-fly.

Fig. 1 is the larval condition of the Phryganea, one of the Sedge family.

Fig. 2 shows the larval case of this water insect.

Fig. 3 is the pupal stage of the same water insect.

Fig. 4 is its flying stage.

THE PERLIDÆ: THE STONE-FLY

The sub-aqueous existence of the Perlidæ after leaving its egg and until maturity is reached consists of a crawling and swimming larval condition lasting several months, during which phase it gradually matures and attains by progressive changes a state ready for metamorphosis. (See Plate XVI, Figure 1.) When this is reached it swims to the surface, crawls ashore, attaches itself to stone, rock, or timber, and undergoes a direct metamorphism into its imago existence.

Its appearance at first is delicate and pale, and it appears to have a great difficulty in flying; but its colour soon darkens, and it grows stronger on the wing. (See Plate XVIII, Fig. 2.)

In Plate XVIII, Fig 1 shows the larval stage of the Perlidæ *Nemoura variegata* (Old Joan), magnified about

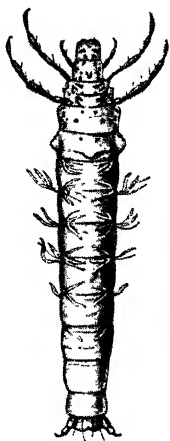


FIG. 1. The Tricoptera Phryganea (Sedge-Fly), three times natural size. This larva spins a cylindrical tube, and when it reaches maturity closes the end and enters its pupal existence.



FIG. 2 Caddis Fly. Larva in sac
Natural size



FIG. 3 The Pupa, three times natural size, ready to tear open its pupal envelope and to enter its imago or perfected flying existence.



FIG. 4 The flying form, magnified

two-and-a-half diameters. The characteristic wings of this water insect are to be seen on either side of its body, and the larva is shown just before it undergoes its metamorphosis. Plate XVIII, Fig. 2, shows the mature state of this fly.

The following are some well-known forms of the Perlidæ: Stone-fly, Yellow Sally, etc.

THE SALIDÆ: THE ALDER

The sub-aqueous existence of this form of insect life is purely larval.

The eggs are laid by the female Alder on grass, rushes, etc. When the young larva is hatched, it crawls into the water and continues its existence more or less in the shelter of the mud until it is ready for its pupal stage. (See Plate XVIII, Fig. 3.)

It then leaves the water again, and burrows in the earth to pass its pupal existence; it there assumes the condition of chrysalis or pupa. Changing from the pupal to the flying imago condition within the shelter of this retreat, it crawls to the surface and finally takes flight. (See Plate XVIII, Fig. 4.)

The best known form of this fly is the Alder.

THE DIPTERA, OR TWO-WINGED FLY

The very numerous varieties of this class of insect preclude more than a brief reference to those forms which the fisherman is most likely to copy as artificial flies. These are: The Black Gnat, the Oak-fly, the Spider-fly—the Cow-dung, the Golden Dun, the Haw-

thorn-fly, and the Claret Smut, sometimes known as the Red Quill Gnat.

The larval and pupal characteristics of these flies differ widely, and the student can do no better than consult entomological works on this and the other families of water insects.

The most common form of this family is the house fly, and this hardly needs illustration, but its larval and pupal stages may be of interest to the reader. (See Plate XVIII, Figs. 5 and 6.)

NATURAL AND ARTIFICIAL FLIES

While it is recognised that the artificial fly should resemble as much as possible the flying insect, it has been found impossible to impart to a dead or an inert lure the distinctive moving appearance peculiar to a living insect, and methods have therefore been adopted to secure as near as possible the appearance of a living insect when it is floating on the water. For instance, the *Ephemera*—in its sub-imago state (Fig. 4, Plate XVI)—when on the water holds its wings in a vertical position, touching each other as they rise from the body, and the natural insect, as it floats down on the surface of the river, is able to keep itself and these wings in an upright position simply by using its legs as balancing poles or centre-boards. But, the artificial fly representing this family, if its wings were fashioned in a similar manner, would have no such power to poise itself in an upright position as a yacht, and so it would fall over on its beam ends, the wings resting on the water. To prevent this

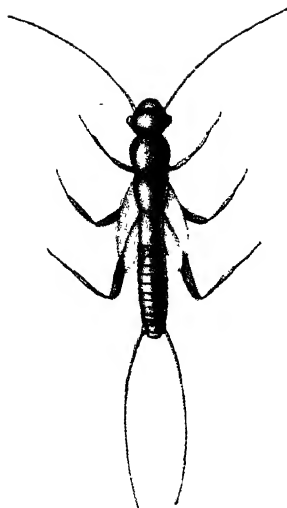


FIG. 1. Perlidae, *Nemura variegata*—Small Red Stone-Fly—(Old Joan). Two and one-half times natural size. The larva is shown just ready for its metamorphosis into its imago or perfected flying existence. Note the wings. These wings are full sized, but are most delicately packed under their small envelopes, as shown above.

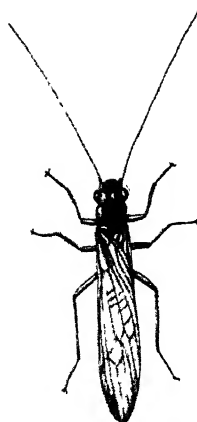


FIG. 2. *Nemura variegata*. Flying form of Fig. 1. Magnified.

PERLIDÆ

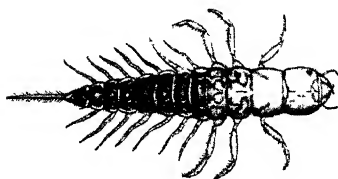


FIG. 3. *Sialis lutaria* (Alder Fly). Larval form. Magnified.



FIG. 4. Alder Fly in flying form, twice its natural size

SIALIDÆ



FIG. 5. *Diptera Musca domestica*. Pupal form of House Fly, four times natural size.



FIG. 6 Larval form of same, four times natural size.

DIPTERA

capsize, fly makers tie these wings as though they were held apart at a wide angle, the result being that although the fly may have one wing resting on the water, the other wing will remain in a vertical position and thus will, to a certain extent, imitate the poise of the natural insect on the water.

WHAT SORT OF FLIES TO USE AND WHEN AND WHERE TO USE THEM

If possible, the fisherman should determine before he leaves home what flies he may be likely to want when he gets to his water, so that he may be certain of having his fly box filled with those which are likely to be taken by the fish. He should, if possible, find out with which one he should commence his work, for should there be no hatch of flies on, no flies to be seen on the water, and no evidence available on this subject when he arrives there, he will probably lose a great deal of valuable time ere he finds out the particular one which is likely to tempt a trout to rise.

Should he have had no previous experience of the water he proposes to fish, he should endeavour to discover from the owner, or from the keeper of the water, the names of those insects which are hatching out and to which the trout are rising. Some idea as to the flies which are required can be obtained from the fishing tackle people in that part of the country which he intends to fish.

The advent of the different flies is extremely uncertain, and all former experience, as well as the latest information from the water, may have to be modified by the cir-

cumstances which exist at the moment at which he starts his fishing.

The list of artificial flies on p. 258 may be useful to the dry fly fisherman, when purchasing his fishing outfit, and it will serve as a guide as to the principal varieties of flying insects which are, generally speaking, met with in different parts of the United States and at different seasons of the year.

By making inquiries from some local authority, or at the nearest fishing-tackle business, a great deal of trouble and disappointment may be prevented when fishing a stream for the first time.

The beginner should always carry a small fly net, with which to capture, and so examine, the flying insects which he may observe on the water or by the waterside. Much useful knowledge will be thus acquired, and his chances of success greatly increased, if he is aware, from hour to hour, of the flies which he may have to imitate, if he desires to catch trout.

FLY BOXES

After using nearly every pattern of Dry Fly Box I have come to the conclusion that while it is necessary to have a fair-sized wooden or cardboard case divided into compartments and fitted with celluloid lids, in which to keep a general stock of eyed flies, it is better for field work to have one or two small sized japanned tin fly boxes, each containing from twelve to fifteen compartments. These fly boxes are light, and either one or both can be carried without the slightest inconvenience in the creel or in the pockets of the fisherman. Each

compartment of these fly boxes should have a celluloid lid, so that the flies may be always on view; such compartments should be numbered, and should contain a carefully selected assortment of the flies which are likely to be wanted. On the inside of the lid of the box should be a list of the names of the flies carried, and numbered in accordance with the numerals on the different compartments of the box itself.

The advantages of this method of carrying the flies when fishing are many—the beginner will find it to be the best and most expeditious way of acquiring a knowledge of the names of the imitations which he will have to use when fly fishing.

If, for instance, a novice hears that the Red Quill is being taken on the water he is going to fish, he has only to consult the lid of his fly box, and he will at once see which compartment holds the Red Quill flies, and he will then find out what they are like, and lesson number one is learnt. If, on the other hand, he catches a fly on the water, upon which the fish appear to be feeding, and compares it with the flies in his fly box, he will soon find a similar flying insect, whose name he will discover on the lid of his fly box, and another useful lesson will be learnt, and so on, until this, at first, very necessary list of the flies can be dispensed with.

Although I still possess them, I have discarded the use of large fly boxes for field work; they are heavy to carry and there is a danger that when handling it, the box may be dropped, the lid may come open, and the flies lost, etc.

DIFFERENT FLIES AND WHEN TO USE THEM

The hatches of the different varieties of flying insects during spring, summer and autumn merge into one another, and while the advent of some species is peculiar to spring, some to summer, and others again to autumn, several of them are to be seen and will kill, all the year round.

Different varieties of flying insects will be found to occur in certain districts, certain flies being local in their occurrence, but the list on page 257 comprises the names of the imitations of the best known flying water insects with which trout are generally captured, and while the names of these flies may vary in different fishing districts, yet the list will be found to be fairly comprehensive and reliable.

The Gravel Fly, Grannom, Hare's Ear, Tupp's Indispensable,* Stone Fly, Yellow Sally, and the Sand Fly, etc., are some of the flies peculiar only to certain localities.

Certain flies, such as the Blue Dun, Blue Quills, and Blue Dun Hackle, can *at times* be used in place of one another, and so with the Red Spinner, Red Quill, and Wickham's Fancy, also with the Light Evening Dun, the Light Yellow Dun, and the Light Olive Quill. By this I mean to imply, that if the fisherman does not happen to have a pattern of any one of the above flies, exactly similar to the natural fly on the water, he will be well advised to try another of the flies thus grouped together.

Looking back over many years of trout fly fishing, it

*Frequently known as the "Pink Lady."

sizes in which they will be encountered, and while it is impossible to give anything like a perfect list of the approximate sizes which should be within reach of the fisherman, I think that flies marked in the above list with an asterisk may be stocked on the No. 14 hook, but those marked with a dagger on a No. 18 hook, and those marked with a double dagger may be stocked in both these sizes. It is important to remember to use the finest gut on these small sized hooks.

THE FANCY FLY

The use of the large fancy wet and dry flies, so popular in our country throughout the year, is by no means conducive to the entomological study of the flying water insects which are prevalent in the summer months. It certainly makes fly fishing a more simple matter when you rely on some few killing flies—but it leads to a self-satisfied disregard of what may be frequently taking place around you—and that other forms of *Ephemeridæ*, etc., are on the water, are preferred, and are being taken by the trout. The neglect to notice the ever varying character of the flies which are hatching out and being taken, especially during the latter months of the fishing season or even in May or June, frequently leads to a less successful day's fishing, the tendency being to leave the ordinary fly box at home, and to persist in presenting the Royal Coachman, the Cayhill, etc., to fish who may be feeding persistently, though quietly, on Red, Blue, or Olive Quills, etc.

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ON THE PATTERNS OF FLIES

The fly fisherman to be successful must cultivate the habit of observation.

It will be the observant fisherman who is able, at certain times, to discover the fly on which the trout are feeding, or at other times, be able, by recalling the result of former observation, to select a fly which will attract the fish, and by the success which will result from his observation, and by the non-success of his brother anglers, discover how extremely valuable is this faculty of observation, or memory. But trout appear *at times* to throw off their accustomed caution and daintiness, and feed eagerly upon almost any variety of flying insect—no matter how it be presented to them, in which case, should you keep even one-third of the fish you net, you will probably have more fish in your creel than you care to carry.

THE EVENING RISE

In spite of the glamour which surrounds the magical hours of the evening rise, this important feeding time of the trout but too often results in the disappointment of the dry fly fisherman, for, no matter what size or variety of fly he may use the furious boil of the rising trout will bring few, if any, fish to his creel. The beauties of the summer evening sunset are then overlooked, the approaching dinner hour is forgotten—as millions of tiny water insects suddenly spring into their flying existence—and the surface of the water, upon which these tiny insects suddenly appear, will just as suddenly be

stirred into the rippling beauties of a thousand reflections as the evening rise commences. This activity of the trout is most frequently due to an ascending multitude of the smaller water insects, which, at this critical moment of their watery career, cast off the trammels of their aqueous life and proceed to enter into their very brief but beautiful flying existence. It is at this hour, when the colours of the sunset are reflected from every ripple of the water, that the trout enter the carnival of their daily existence. As these water insects leave the sheltering weeds and rise to the surface, they become more clearly outlined to the trout against the brightness of the sunset sky, and as each little atom of insect life struggles upward to shuffle off its now irritating water-proofs and to dry its unfolding fairy wings on the surface of the water, it is preparing to join the myriads of the glad throng which are being wafted on the ambient atmosphere, and thereon to find the mate for which they are created.

But it is at this time—the most interesting phase of its life—that it incurs the greatest risk, for as it struggles to throw off the pupal casing, the trout makes his upward dash and destroys its birthright—the joy of an aerial existence.

Flying insects descending on the surface are at this critical moment most frequently ignored by the fish, for it seems probable that the whole attention of the fish is devoted to the weeds and to the insects leaving them, which insects are trailed to the surface and there taken by the trout.

It did not take many evenings of disappointed efforts

with the Dry Fly, to solve this problem and to discover—as I daresay others have done—that until this exciting carnival of the evening rise has ceased, the trout which are captured will be found to have their gullets crammed, *not* with the perfect flying insect, but with immaturely developed ones, whose wings, at the moment at which they are taken by the trout, are insufficiently developed to allow them to leave their floating toilet quarters and to find safety in flight.

When this phase of a rise occurs, the Dry Fly fisherman will be well advised should he place on his leader one, two, or more dry flies of the Blue Quill—Wickham's Fancy, The Greenswell Glory type—and trimming their starling wings down to a minimum size, fish them upstream, wet, and near the surface. A slight jiggling motion is advisable as these flies are played up to, or on the surface. If a light or dark blue quill be used, its wings thinned and its body enlivened with a little gold twist, it will probably be found to be the most killing at this particular time of the evening rise.

Let no one think, therefore, that because he is an expert with the Dry Fly, his success will, of necessity, at such a time outshine that of the expert Wet Fly fisherman. There are times when a Dry Fly will be the only lure which will attract the trout, and the reason is, that the fish are then expecting their food from above them. Their attention, therefore, is fixed on the surface or above it, and the minute movement of the alighting fly is at once noticed. But what when they are expecting their food from below them: Will they not be looking for their insect food as it rises from the waving

masses of the weeds, or, from underneath the other shelters which exist on the bottom of the stream? It is certain that on such occasions the attention of the fish will not be directed specially to objects *on* the surface, and the artificial fly, or the insect food, which alights thereon, may go on its floating passage down-stream without attracting their attention.

Thus, when the surface is broken by the reflection caused by the movements of eagerly feeding fish, it will not mean that the Dry Fly as it falls on the surface will be taken or even noticed by the rising trout. This peculiar and well known evening carnival of a trout's life may mean, only, that the fish are eagerly following to the surface and seizing—ere they can escape—the various larval or pupal forms of insect life, as these speed upward bent only on discarding the aqueous clothing and escaping, on their newly developed wings, from the trammels of their under-water existence.

However exact may be the artificial fly, both in colour, shape, and size to the natural insect which the trout are taking, a fisherman will often find that his artificial one will be neglected in favour of a natural fly whose legs and wings may happen to be moving. In such a case, it is advisable to change the fly for one of a totally different colour, shape and size, but I think it should be one which is generally on the water, or taken at that particular season of the year. Nothing can be more illustrative of this than the usefulness of the Alder or the Welshman's Button during the May fly season.

THE RISE—ITS CAUSE

Trout rise to the fly at all hours and during all weathers. In the early moments of dawn, during the hottest hour of an autumn day, as the sun sinks, as darkness descends, and during the stilly hours of a midsummer night, distinct and noticeable rises of trout may be witnessed. If, however, I had to select any four hours on any day during the season in which to fish, I think I should choose the hours between 10 a. m. and 2 p. m.

The causes which lead to the rise—that mysterious impulse which suddenly quickens the trout world into the activity of feeding time—have, so far as I am aware, never been satisfactorily explained; it is, therefore, with some diffidence that I advance a theory which I have held for some time as to this important problem.

I consider that one common cause of the rise is the sudden impulse of the pupæ of the water-insect to ascend to the surface and take wing.

Fishing one day with a Grannom on one of the stretches of the Axe, in Devonshire, I had by noon creeled several trout, when a furious rise of the fish commenced in my neighbourhood.

To my surprise, neither the rising trout nor the dace would look at the Grannom, and after many fruitless casts I decided to change my fly. This I did several times, but with no success, until at last by the aid of my small butterfly-net I captured a fly, on the water, which turned out to be an Iron Blue in its sub-imago state, and the first I had seen that season. Hastily putting one on my leader, I secured a fish at my first throw, and although

the rise only lasted some twenty minutes longer, I caught seven other fish. When the rise ceased there existed a big hatch of Iron Blue in the air, but the few solitary rising fish took no further notice of them and they rapidly disappeared. I tried one however, for some time longer, but eventually I replaced it with my Grannom, and creeled several other trout before going home.

Before putting on the Grannom, however, I examined the food in the latest caught fish, and found that the upper part of its gullet contained a great number of *nymphæ* or *pupæ* of the Iron Blue in their most advanced stage, several specimens having their wings already partially unfolded.

I am inclined, therefore, to think that, owing to some alterations of the meteorological conditions, the pupæ of this Ephemeridæ, moved by one of those mysterious impulses which occasionally influence the insect world, had risen to the surface to assume their sub-imago existence, and that this general movement was the cause of the trout leaving the Grannom in favour of the Iron Blue.

Since that occasion I have corroborated the theory I then formed by examining the food of the fish caught during a sudden rise, and have found that it consists, as a rule, of a greater number of the pupæ than of the sub-imago of the existing hatch. I have also noticed the trout during a rise taking the pupæ below the surface, and have seen the trout following pupæ up, and taking them just as they reach the surface of the water.

I do not claim that this suggestion will account for all the general rises peculiar to trout, but I think that in many cases it can be proved to be due to some initial

movement of the pupæ towards their next metamorphosis. A few heavy drops of rain are followed or accompanied by a rise; this rise may be produced by an upward movement of the pupæ in response to the meteorological influences at work. Again, certain summer evenings, at about the same hour and for a similar period, generally as the sun sets, will produce a general rise; this rise, so well known to fishermen, is, so far as I can see, to be accounted for only by the cooler temperature inducing a general change from the pupal to the flying state of certain small water insects; these, as they ascend to the surface, become clearly visible to the fish, which follow them and seize those which have not had time to assume a flying condition. The fish are not, therefore, feeding on flying insects. This evening carnival of the trout is invariably accompanied by an enormous hatch of small flying Ephemeridæ, etc., probably those which are missed by the trout and thus escape from the surface of the water to which they have risen. Again and again have I witnessed the water at such times fairly boiling with the rising fish, but it has been seldom that I have had the success of landing even as much as a brace of fish, though after this excitement has subsided, the Coachman, Silver Sedge, or Wickham's Fancy, have proved most deadly.

BULGING

There is no doubt that "bulging" is produced by the activity of the aqueous entomological life.

The method by which the latest food taken by a trout can be determined is by holding the trout in one hand, and, with a firm upward pressure of the fingers of the

other hand towards the gills, expressing, or forcing into the mouth, the latest food swallowed by the trout, which may then be examined. Should this pressure not succeed to the satisfaction of the angler, the knife can be used to open the upper part of the gullet or stomach, in order to discover of what this food consists.

ENTOMOLOGY IN ITS BEARING ON ARTIFICIAL TROUT FLIES

Exhaustive as have been the researches of American entomologists, and complete as has been their standardization of water insect life, no serious attempt has yet been made to bring the eruditional side of this study into relationship with the more simple knowledge which is necessary to the fly fisherman.

The dry fly fishing fraternity of Great Britain have, however, already compiled a definite genesis of the various forms of water insect life which exist in their streams, and they have, in order to insure their own success when fishing with artificial flies, imitated as nearly as possible the variations which exist in the natural appearance of the flying insect life abounding on, or about, their own trout streams. As the families of these flying insects do not, in their entomological aspect, appear to differ to any great extent from those of America, the work they have thus done may, for the moment, serve as a general guide to the water insect life of our own streams, etc.

It may be taken as granted, that the artificial fly which will be most successful will be the one which most nearly resembles the flying or swimming water insects on which the fish are feeding, and therefore, other things being equal, the fisherman's success will depend on the

accurate observation which he is able to give, from moment to moment, to the prevalent insect phenomena, on or in the water he is fishing, and on his good fortune in being able to produce, from his fly box, an accurate imitation of such flies.

He must, at present, largely trust to his own judgment and power of observation and in conformity with the hatch, that is, the appearance of certain flying water insects, the fisherman may assume that this variety of flying insect, or its fellows, will shortly be taken by the trout, and the difficulty which will confront him will be the selection of an artificial fly which will be an exact duplicate of the size, and colour, in which nature has, for the moment, chosen to dress them.

FANCY ARTIFICIAL FLIES

The general run of the *fancy* flies sold in fishing tackle stores, though they may carry little if any resemblance to any flying or swimming creature, are yet very killing lure when fished at certain depths, in certain lights, and on auspicious occasions. But no matter how well such artificial flies are known, and no matter how many fish they kill, their artificial and fancy character will, to a great extent, rob the sport of fly fishing of some of the charm which it would otherwise possess.

I think, from my own experience, that fancy flies which are designed to be fished below the surface should be less heavily dressed than those which have to be fished on the surface.

The dressing of the wet fly should always permit the passage of a certain amount of light through its wings,

hackle, etc., which light is intended to give, at certain times, a delicate iridescent effect to its colouring.

Generally speaking, the more glaring the colour of the fly, the deeper should it be fished. The darker and the more sombre the day, the nearer to the surface should a dark coloured fly be used, and the less heavily should it be dressed.

Quite apart from the prismatic colouring imparted to sub-aqueous objects by the moving shadows thrown by the waves as the sun is approaching the horizon, the river bed itself possesses the most beautiful shades, tones and half tones, of colour, and these, together with the colours of other sub-aqueo objects, are reflected not only from the under surface of the water, but directly or indirectly from the reflecting surfaces of floating or stationary objects.

When one bears in mind the softening influence which water has on the colouring below the surface, it is almost possible to forgive the gaudy colours in which the inventors of the fancy flies have chosen to clothe them, and, when it is possible, to reduce this heavy clothing or, by original design, produce such excellent patterns of wet flies as those manufactured by Mr. Charles F. A. Phair of Presque Isle, Maine, Messrs. Wm. Mills & Son, Abercrombie & Fitch, etc., the number of fish which should be secured will be materially increased.

THE INFLUENCES OF ENVIRONMENT ON THE COLOURING OF FLYING INSECTS

The environments and character of a stream undoubtedly affect the colouring of the living water insects which

it fosters. So much is this the case, that the fly book of an experienced fly fisherman, who confines his fishing to similar kinds of trout streams in any one district, will undoubtedly indicate to the expert, by the colouring of its artificial flies, the geological as well as the natural colouring associated with the streams on which these flies are used.

FLIES AND TROUT

If a river is naturally rich in the attributes which foster and maintain a great variety of those water insects which attain, by metamorphosis, a flying state, then it will be found that the more exact the pattern of your fly to those flying insects which most commonly abound, the greater will be its success.

It is because of the comparative scarcity of many forms of water insect life, in the more rocky and less weedy of our waters, that the gaudy and clumsy artificial flies, of large pattern, are undoubtedly successful. At certain times, and if the water in which you are fishing be poor in its insect producing qualities, a less rigid adherence to the dress-colouring and size of the lures you use may lead to success. In other words, the fisherman cannot be too exact in the patterns of his fly when the water abounds in flying insect life, and it may be from the above facts that flies when tied with intelligence by local fly dressers, well acquainted with the entomology of the rivers or lakes in their own districts, should be carefully tried by a visiting fly fisherman.

THE PHENOMENA OF RISING FISH—SALMON

Philosophy can go but little ahead of experience and common sense, as regards the phenomenon of the rising fish. What we do know, definitely, is that the food which is required by the trout is by them generally accepted. Appetite, the scarcity or abundance of natural food, the conditions of the water, the temperature, etc., etc., are among the causes which are responsible for the feeding, or the non-feeding, of fish, and, therefore, the phenomena of the rise can generally be solved and subsequently utilized from the experience acquired on the riverside. Common sense may, therefore, not only explain the phenomena of the rise of trout, but may guide the fisherman in determining his lures and his methods of fishing. We have, however, but little to guide us, in determining the far more difficult reasons which actuate rising of salmon to the dry fly.

The ever changing variety of colours in the ephemeriæ, etc., etc., even when seasonable phenomena remain constant, prevents any exact dressing of any particular flying insect from being relied on as an infallible lure to kill at any certain period, or any particular day.

We may, when we know a river well, expect that a certain fly may kill at a certain time of the day during a certain portion of the season, and of course we take such flies in our boxes, but it is impossible, unless by a lucky chance, to choose the exact colours in which nature has, for its own good purpose, chosen to dress the delicate and illusive flying insects which, at any particular

moment, may be attracting the attention of the trout in the stream in which we are fishing.

Consider the ever-varying shades of blue, of olive, of red, of yellow, of dun, of gray, etc., in which those flying insects appear, and of the varying shades, which seem attendant on a change of the meteorological conditions of the air or of the water. Unless, therefore, considerable attention is paid to those natural and constant changes in the flying insects, whose appearance we have to imitate, on the streams we are fishing, we may not be successful.

COLOURS WHICH EXIST UNDER THE WATER

When fishing in calm weather and in clear and smooth water, the dry or wet fly should be a perfect imitation in size, shape, and colour of those flying or swimming forms of insect life on which the trout are for the moment feeding.

The more the weather, the condition of the stream and the state of the water varies from this condition, the less necessity will there be for so strictly following the garb in which nature has clothed the insect life of the moment; colour may be altered and motion may be varied in using the wet fly, so that, when the artificial fly is seen by the trout through discoloured or broken water, on cloudy or stormy days, or in rapidly moving water, it will carry a general, rather than an exact likeness to the foods which the trout are seeking. It must be remembered that colour in the artificial fly can be more freely used when fished deep, or in the foaming eddies or swirls of broken water, these conditions tending to soften, or

break up, their more vivid appearance and produce at certain times an iridescent colouring which will resemble certain moving forms of water insect life. In other words, the quieter and the clearer are the conditions of the water, the more nearly should the artificial fly, whether it be fished dry or wet, resemble the tones and colouring of the natural insect. The dry fly, when thrown either up or down-stream, will, in the foam and rush of the rapids, lose some, at least, of its characteristic beauty of form and will become, before long, more or less similar to the helpless forms of dead insect life which are tossed about in the eddies of these rapids.

FIDELITY IN COLOURING AND PATTERN

The most admirable imitations of the various flying insects are being made by the fly tying community, and in this respect, nothing surpasses the quill bodies which are used in certain floating flies. I have many such flies in my fly boxes, which have been used over and over again during the last forty years, and while the wings of these flies have undoubtedly suffered, the bodies and hackle are as beautiful in their delicate form and colouring as are the bodies of the natural water insect of to-day. I find that these old flies are extremely useful when the weather is not too perfect. Nearly every experienced fly fisherman will have noticed that when the first perfection of his artificial dry fly has worn off, that is when this fly has been knocked about—while being fished—it will oftentimes become even more killing than when it was in its new and unsoiled condition. This is possibly due to the fact that a general, rather than an exact, impres-

sion of the floating fly on the water is all that the conditions of light and weather will permit the fish to obtain, also that the fly—if in its perfect condition in perfectly clear weather—might disclose a difference in its make-up to the natural fly, which, however slight it might be, would be visible to and noticeable by the trout, and probably put it down. This effect of a well used fly has been to a considerable extent responsible for the popularity of the modern hackle fly, which has this advantage—that when it is well made, it not only keeps its floating properties better, but keeps its general resemblance to the insect which it is meant to imitate, and also that it will continue its usefulness for a much greater time than will the delicately fashioned winged fly.

Owing to the diversity in the colouring of the geological and sylvan phenomena of America, it is little wonder that a very great divergence in opinion should exist in regard to the general merits, or otherwise, of locally designed wet flies. These differences of opinion would probably not be so great were a more determined movement made to rely on the exact imitation of those living creatures on which the trout feed. As systematic and careful study is given to this problem, I think it probable that a gradual falling off in the popularity of the more gaudy flies will take place. In Great Britain, especially in regard to trout fly fishing, flies of neutral or natural colours have, for many years, been the most popular means of adding to the weight of the creel.

The fancy flies, which are so generally used, have nearly always conveyed to me an appearance of the moths, locusts, wasps, and the larger kind of flying in-

sects which appear irregularly throughout the year, and though colour undoubtedly excites, or attracts trout with varying success, each artificial fly should have the appearance and colouring of some one of the many flies which appear on or beneath the surface of the water. I have found that the flies, when they are carefully selected to favour the insect life of the day or the season, are more successful than any of the purely fancy ones. Mr. L. B. France, in a delightful work on fly fishing, says—"In the matter of lures, the taste of the trout must be considered. It is well to have in your fly book a little of everything."

MISS M. O. MARBURY

Miss Mary Orvis Marbury, in her valuable and very comprehensive illustrated book entitled "Favorite Flies and Their History," gives a great many coloured illustrations of the fancy flies, which are regarded by a large number of experienced fly fishermen of America, as being, in their opinion, the most useful to fish with, but, as she says in her preface: "Even those flies which are the imitations of natural insects are not as perfect representations of nature as they might be, and therefore are not wholly satisfactory." This perhaps is the crux of the whole question, for successful fishing should attend the successful imitation of the natural food on which the trout are feeding.

CHARLES F. A. PHAIR

Selecting, in their order of popularity, some twenty different kinds of the fancy flies used and recommended

by a great many well known wet fly fishermen in the various fly fishing states of America, they would rank somewhat as follows:—

The Coachman.	The Cahill.
“ Professor.	“ Parmacheene Belle.
“ White Miller.	“ Ruben Wood.
“ Red or Scarlet Ibis.	“ Seth Green.
“ Royal Coachman.	“ Stone Fly.
“ Silver Doctor.	“ Governor.
“ Queen of the Waters.	“ Cow Dung.
“ Montreal.	Etc., etc.

In the opinion expressed by Mr. Charles F. A. Phair of Presque Isle, Maine, he states in answer to my inquiry, that he considers the ten most popular wet flies used in Canada, in Maine and possibly in the more Northern and Eastern states are:—

The Parmacheene.	The Hare'ear.
“ Royal Coachman.	“ Various Spiders.
“ Professor.	“ Coachman.
“ Greenwood Glory.	“ Cow Dung.
“ March Brown.	“ White Dipped Montreal.

In regard to dry flies, Mr. Phair favors the following:—

Worthington.	Royal Coachman.
Greenwood Glory.	Olive Dung.
Pink Lady.	Red Quill.
Cahill.	Silver Sedge.
Gold Ribbed Hare'ear.	Wickham's Fancy.

He considers that May flies do well in Maine in August and September, and the Palmers, in browns and grays, being most deadly in the latter months of the season. Mr. Phair's flies are well known. He exercises consider-

able restraint in his dressing of his wet flies, which are fashioned so as to permit the passage of light through the dressing of their wings, etc., and they thus acquire an opalescent iridescence which is particularly killing when wet fly fishing.

It must be evident that no visitor to the States, or Canada, should fail to keep with him a fairly all round collection of the fancy flies used in each district he visits, nor should he neglect, as opportunity offers, to pay a visit to the best known tackle shops which are to be found somewhere in the centres of each such fly fishing district. When fishing from Boston as a centre, for instance, the opinion of Mr. Dana Chapman, now associated with the firm of "Bob Smith" of Boston, will, if solicited, reward those who require either fishing gear or general information.

CHAPTER XI

AXIOMS—NOTES AND THEORIES

Hints to the Student—Axioms and Advice on Sundry Fishing Matters—Gut Leaders—The Trout Fly Rod—Lake Fishing—Difficult Fish—Grayling—Netting a Big Fish—Axiom—Trout versus Salmon Fishing—Game Fish—The Big Fish We Lost—Difficult Spots—Relative Merits of Trout and Salmon Fishing.

HINTS TO THE STUDENT

EXPERIENCE and common-sense are the most valuable guides when actually fishing. No two days are alike, and on each stream and at each turn, the fisherman will most likely encounter some fresh problem, or new combination of circumstances. This is perhaps one of the greatest charms of dry fly fishing, especially on small streams. To read is good, because it shows from the personal knowledge of others, that no two experiences of the same writer are absolutely alike, and no hard-and-fast axioms of fishing lore can invariably be followed. The attendant circumstances should guide the immediate actions of the moment.

There are, however, certain truths and axioms which occur to me and which the beginner might do well to remember; they may perhaps be tinged with a personal colour, for they are the results of my own fishing experience.

Success in Dry Fly Fishing depends on the casting of your fly.

Success in Wet Fly Fishing depends on the fly you are casting.

The fisherman should always remember that nothing succeeds like success, and if he believes in the fly he is using, he is more likely to be successful than if he is doubtful as to its virtues. The suggestion that the fly he is using must be the best, encourages him, and I can even imagine a day's fishing to be interesting from start to finish, in spite of the fact that no fish have come at the fly, if the fisherman himself believes that his fly is the only one that will kill at the time.

This means that the suggestion of infallibility aids the fisherman in that continuity of attention which is so necessary to the purpose in hand, *i. e.*, attracting the attention of the fish. I think, myself, that there is no fly like my own "Fancy," and while a certain amount of optimism may be allowed, because of the success I have attained with it, at the back of my brain I know full well that some at least of its success is due to the suggestion of its infallibility; *rr*, this fly be well cast!!

The beginner, he who has been badly taught, or the self-taught man who may have acquired bad habits, fails to understand why his friend catches fish after fish, during the day, while he secures but a few, if any.

The skillful fly fisherman, who can take every rising fish within his reach, seldom attributes his success or his friend's failure to the immediate cause, which is the skillfulness or unskillfulness of each cast.

The Dry Fly fisherman, for instance, has, as a rule, only one opportunity at each fish, and it rests with him as to the making or marring of that chance. Each initial cast for a trout possesses a greater or less difficulty, and success will depend on the immediate and skillful man-

ner in which the fisherman takes advantage of his opportunity.

The most essential portion of the dry fly fisherman's art, is the power to place at once, and with certainty, the right fly, delicately and accurately, just above the fish.

AXIOMS

Remember that the fish you desire to creel will only be caught when in the act of feeding.

Therefore, that the whole of your art must consist in inducing the fish to feed.

That anyone can purchase the required and necessary artificial flies, for a few dollars; and therefore,

That the difficulty must lie in the manner in which these flies are presented to the fish.

Among the many factors which contribute to the happiness of any day's fishing, the killing of the fish is an incident which ranks least.

The best fisherman, in my opinion, is he who nets most fish and who kills or injures the least.

There can be no harm in filling one's creel if its contents are employed in "pleasuring some poor body" as Izaak Walton has it, but to effect the depletion of a trout stream for no other purpose than that of proving one's skill, and to toil during the day under a creel loaded with those beautiful fish, in order to establish our own prowess on our return to our fishing quarters, is a vanity which calm consideration should soon permit us to conquer.

A fisherman's day may be considered to be one on which trout are difficult to capture. A duffer's day may

be considered to be one on which the fish are superlatively easy to capture.

It should always be remembered that the killing of a healthy three year old fish puts an end to the most beautiful, valuable and interesting period of its life.

Always be charitable; never discredit a reputed trout stream because you have been unlucky on one or two occasions. "No fish in the river" is a rash statement to advance because, after one or two visits, no fish have been caught, or possibly seen. A futile visit to a stream and a hasty opinion thus formed may be regretted. I remember, by the kindly courtesy of a French landowner in Normandy, taking a day on his stream, in which he told me were many trout. I had been doing well all the week, but on this day I had the poorest luck, and, therefore, hastily concluded that the stream was almost barren of trout. Consequently, on one memorable day on which the May-fly was dominant, instead of going with a friend who was fishing this stream, I went farther and fared worse, and found, on meeting my friend in the evening, that he had enjoyed a glorious day's trouting. I still regret losing that excellent day, and consider that, as regards any water, first impressions are not always the soundest.

The golden hours of a trout fisherman's experience will generally be from 10 a. m. to 3 p. m.

It is during the first rise, in fine weather, *i. e.*—when trout first come on the feed, that most fish will probably be taken. You may miss this rise! *Don't!!*

However great may be your success, never underrate the alertness of the trout—Your fly may be irresistible,

but you should continue to fish with the same respect and caution you adopted toward the first trout of the day.

As the big fish most frequently rise in a slow and dignified manner, their rise is generally of a less noisy character than that of an eager and voracious youngster. The dimple made by a big fish may be less, but the wave will probably be bigger, and to the unobservant or inexperienced fisherman the difference is not always discernible. The musical, sucking noise of the big fish, when feeding at night on surface food, is unmistakable.

Do not "press" in fly casting. Use the least force which is necessary in order to achieve your best cast.

If it be possible, always keep a taut line after a fish is hooked.

Play your fish from the reel if possible.

Keep your rod well up when playing the fish.

A constant and delicate strain on the line secures many a lightly hooked trout—which otherwise would be lost.

Always remember that in very weedy water, it is better to let a trout go up-stream into the tail of a bunch of weeds, than to pull him down-stream and let him get sideways into the thick of such a danger. A fish which may seem hopelessly entangled in weeds and brushwood may, with patience and nerve, be ultimately creeled.*

When about to net your fish, use your reel as little as possible.

Your man, your rod, your reel, and yourself, should be as still as a heron at that critical moment.

Look frequently to the point of your trout hook, and

*See pages 165-6 re Weeds and Handlining.

always carry a small file in case the point becomes blunted.

If you cannot cast *delicately*, avoid casting *directly over*, a trout, but get your fly above and within range of the trout's vision as soon as possible after one has risen.

When a trout is seen rising, so long as a fly floats into the circle which bounds its upward vision (see Diagram 14), the angler may rest assured that he has done all he can do. If immediately below your fish—and the rising trout are very shy—the line can be thrown, so that, while the fly alights immediately above the trout, the leader will fall to the right or left of the trout's position, and as the fly falls on, and breaks the surface of the water, though it may be visible to the trout, the line and leader are not so likely to scare the fish as if either had fallen immediately over its head. (See the Drag, page 91.)

Run your dry fly line through your grease pad at least twice during the day's fishing—but only when the line is dry—once before you start, and once after the pause for luncheon; if necessary take off any superfluous grease by running the line through your handkerchief or any dry rag.

If too much grease be put on the line, it hinders its easy running through the rings of the rod.

Keep the point of your rod down when fishing out a cast.

The less slack line there is between your rod point and the fly, the better will be your strike and the greater your command over the fish you hook.

Unreel your line every night and let it dry.

Keep the ratchet wheel of your reel clean and well

oiled, and the spindle clean and just sufficiently oiled to allow the drum to run smoothly.

GUT LEADERS

Gut leaders which have been lying in the damping box all day should be placed in dry flannel at night, and all gut should be soaked, carefully tested and examined before being used.

The length of the gut leader used in dry fly fishing should be about nine feet. I have never found it necessary to use longer ones for trout.

It is always advisable to test old leaders before throwing them away. If the gut has not been exposed to daylight, it may be found that by soaking it in a solution consisting of water and about ten per cent of glycerine, its usefulness may be restored.

The last season's gut should be treated to a judicious soaking in such a solution.

I have found the best natural material for floating a line, or leader, to be hippopotamus fat, but if this be not obtainable, mutton fat is the cheapest and best grease to take with one for applying to the line. It certainly cannot in any way injure the lasting qualities of the tapered fishing line or leader, while being all that can be desired for preserving the line and making it buoyant.

The best method of detecting faulty gut, or a leader that has been weakened in the tying, is by first looking to see if any white spots or glints are showing in the material of the gut itself, and secondly, by bending the gut between the two hands into a loop at each knot. If

the gut is cracked, or has become weakened, the curve of the gut in the bend will not, as a rule, be regular.

Although an old leader may appear to be quite sound before being used, after being soaked for a short time it will sometimes part with surprising ease, and therefore, a test of the strength of the gut should always be made after it has been carefully soaked.

THE TROUT FLY ROD

A perfect trout fly rod should be good for both the wet and the dry fly methods of casting. A rod whose action is centred at or near the spot whereon the ball of the thumb is placed will communicate to the wet fly fisherman the most delicate touch by the fish at the fly, and because the thumb is always continuously,—though subconsciously,—engaged in holding the rod, such a touch will be instantly noticed. Where a very whippy rod is used, and when the action of this rod is not so happily situated, a delicate pull by a fish is not always observed, for the eye is seldom directed to the movements of the rod.

Keep the metal sockets of your rod greased.

Smear your wooden rods with a little mutton fat before putting them away for the close season.

Use the two tops of your fly rod alternately. A convenient way to remember this is to see that the top which has to be used—when the rod is again put together—is next to the middle joint, when you are putting the rod into its cotton pockets at night.

While the fly may be varied with conspicuous success

during the day, this axiom—The finer the water, the finer the fly—should be remembered.

Except it be necessary to cast a long line in order to fish some particular spot otherwise unfishable, always keep well within your distance, and avoid fishing a long line, when a shorter line will serve your purpose equally well.

A good fisherman will—unless severely tempted—cast his fly to the nearest rise before trying for the more distant one.

When fishing from the bank of a trout stream in the vicinity of trees, bushes, etc., nothing can excuse your failing to look back in the plane in which a fresh back cast has to be made. Sailormen have a proverb which runs, "The devil would make a good sailor, if he would look up aloft," and I think fishermen might have an equally trite proverb in—"The devil would make a good fly fisherman if he would only look behind."

In order to make the best possible forward cast the line should be extended in the backward cast—as much as possible directly away from the spot at which the fly has to fall. Therefore, see before casting that this backward plane is clear.

The line follows every movement of the point of the rod.

The above two axioms contain the basis on which every cast should be made.

Each day on which you fish should most certainly add to your knowledge and experience, and maybe to your skill.

Vim and not violence should be used in casting.

Attention implies the recognition of a fact, but consideration means a mental concentration on its relative importance.

Habit results from consideration.

The weather may be unpleasant, the fish shy, your luck villainous, but never be discouraged; your luck must turn, the fish must feed, the sun must shine, and you must catch fish.

Bad luck at the card tables may be ended by a no-trump hand and a big slam. The poorest day's fishing may be concluded with the capture of a record fish.

A perfect trout rod should be one which can project a fly to any reasonable distance, of a taper which will cause an even and gradually increasing curvature in the rod from the hand to the top ring—as it is brought into play—of an action which will make its elasticity merge into that of the forearm, and of a material and construction which will resist the stress of hard work.

Do not use your favourite fly fishing rod or line, either for trolling, spinning, or competitive casting, and never with a desire to show off your distance casting ability, for your rod may suffer, even though you flatter your amour-propre by making a record cast.

One of the many charms of dry fly fishing is the consideration of the problems affecting the first cast of the fly at a rising fish.

LAKE FISHING

You will find, when lake fishing, that at certain hours and on certain days, an artificial fly dressed like the flying insects of the day—if fished dry—will secure the fish,

but that the same fly on the same water and at the same time if fished wet, will probably not be noticed by them. Notwithstanding this fact, the wet fly fisherman will find that throughout the year, when lake fishing, his wet fly, if skillfully chosen, will probably kill the greater number of fish.

In calm weather and during certain uncertain hours of the day, the wet fly fisherman may be unable to obtain fish by the ordinary manner of casting and fishing his flies, and the following is an excellent means of obtaining fish under such circumstances. The flies after a cast should sink slowly to the bottom of the loch, and when they have rested there for a short time should be raised slowly toward the surface by a series of little jerks, and this method, if repeated, will frequently result in the fish being attracted to the lures as they rise to the surface.

Other circumstances being favourable, the more temperate the water of a trout lake, the greater will be the supply of water insects, and as a consequence the larger and more numerous should be the trout.

The rise of trout in a loch or a lake has never such a regular character as the rise of trout in a stream. The loch trout rise much more slowly, and will often watch a dry fly on the surface of the water for some minutes before attempting to move upward to investigate it. A dry fly should, therefore, be allowed to remain on the surface of the water until it sinks. It may then be pulled through and under the water in a series of little twitches, until it is almost at the angler's feet.

I remember on a lake in Ireland adopting this method with very great success, for, the surface of the water

being glassy, I secured half my fish during the day by using these tactics.

GRAYLING

Both with grayling and with trout, it is well to remember that frequently a fish which will take no notice of a fly on the surface will yet come after a dry fly which is pulled under the water and toward the fisherman, with a series of little twitches. It must not be forgotten that surface food is the least common of the foods on which a lake fish feeds.

APPEARANCE OF BROWN TROUT

No two brown trout are similar in their markings. Neither the length of a trout nor its girth, if these measurements be taken separately, can afford any indication of the weight or the age of the trout. The size of the head undoubtedly increases in proportion to its age, but it will be the tell-tale markings of its scales which will record the number of spawning seasons through which it has passed.

NETTING A BIG FISH

When you are into a big fish, never disdain the help of a brother fisherman, *i. e.*, unless you fear him to be a duffer, or inexperienced with the trout net. You never know how faint a hold your hook has in the mouth of the fish, or whether the gut in your leader has not possibly a very weak spot, and therefore, the aid of a knowledgeable fisherman is to be greatly desired, for he may be better able to approach and to net your big fish without scaring it, than yourself.

AXIOM

It is far better to lose a big fish, when unaided, than to have to blame another man's want of skill for your loss.

An educated fish, taken from a difficult position on a difficult day, will do more to store the memory with pleasant and vivid recollections, than would the taking of ten similar fish, under ordinary circumstances and in any one day's fishing. No matter the day, the temperature, the stream, or the weather, a trout sheltering completely out of sight under some rock, etc., has its vulnerable side, possibly its own peep hole, and is worth trying for.

Until you have really put down, *i. e.*, scared a trout, you should always remember that it may be possible to get it to take a lure, and with the most delicate tackle, the most killing fly, and the most perfect casting, although you may for quite a long time fail to obtain any acknowledgment, and though your reward may be delayed in its coming, it will—an' your trout be not scared—come!! and when it does come, it will be very consoling.

Sir Foster Cunliffe, Bart., one of the best known sportsmen in Great Britain, wrote to me from Dieppe as follows, June 14th, 1913:

"I am enjoying every moment of the day here. The trout are well educated, which adds a zest to my enjoyment, but it is not the creeling of the trout which gives me my principal delight; it is the fascinating science involved in their pursuit."

Here speaks the dry fly enthusiast and in the truth which springs from his experience is shown the love of the method which makes dry fly fishing one of the most fascinating and scientific propositions. The more difficult the problem, the keener becomes the joy of a contest and the more delightful the success, but such difficult problems are not too common; when found they are a blessing for which to be devoutly grateful, and but for them, the most skillfully thrown dry fly might—in these publicly fished waters, be very often sadly neglected, especially in July, August, and September.

THE RELATIVE MERITS OF TROUT AND SALMON FLY FISHING

Good sportsmen and good fishermen have said in my hearing:

“That to them the trout was too insignificant a creature to excite their interests, that it was the excitement which the struggle that the larger salmonidæ afforded them, which could alone stir their blood or excite their enthusiasm,”

and yet, I have seen one such lover of salmon fly fishing, after he had learned the art of casting a dry fly, and realised the beauty of thus fishing for trout, salmon, etc., bereft of apparently every vestige of self-control on losing a one-pound trout on his delicate three-ounce Leonard and tapered leader, and this, although the breaking of his leader was to a large extent due to his own want of experience, and I feel confident that his disappointment was as severe and his chagrin as great as if he had just lost a forty-pound Cascapedia Salmon.

I can recall landing my record salmon (fifty-two and one-half pounds) immediately below Gartland on the

Namsen River in Norway, August 27th, 1897, which was the largest recorded salmon caught on a rod in the world in that year, yet I do not think that the forty-six minutes fight I had with this gallant fish, before it was gaffed, gave me so great or so keen an anxiety as that which I experienced when fighting a certain four pound trout which was, after much difficulty, netted by my cousin, Sir Walter Shaw, on the Itchen in 1905, or again, when into a two pound trout—the gamest fish I have ever creeled—which I once had the pleasure of struggling with when a boy in the gloaming of a June evening on the Kennett, just below Marlborough College.

As a matter of experience, I think that I am justified in maintaining that there is just as much skill and presence of mind required in order to land a one pound trout, in early June, on a difficult stream, when using a number 4x gut leader, as there is in hooking and landing a thirty pound salmon in the ordinary manner and on an ordinary river. Also—and this I know—that the knowledge of the necessary flies required has to be more extensive; the skill required to bring such a fly to the notice of the trout, more perfect; the immediate impulse of the strike, more difficult; and, the relative greater danger of breaking one's tackle during the struggle and losing the fish, are all factors largely in favour of Dry Fly fishing for brown trout. Consequently, although recalling a very large and varied experience of the thrill and pleasure of Salmon fishing, and also of fishing for the monsters of the sea, I give the palm to the delights of Dry Fly fishing for trout, and affirm that I have never met a sportsman who, after thoroughly devoting himself to both

Salmon and Trout fishing (Dry Fly), would not after mature consideration agree as to the all round merits of Trout Fly fishing over that of Salmon fishing or, indeed, of any other sport in the world.

THE BIG FISH WE LOST

Can one ever forget the day—our creel being empty and the luncheon hour near—the sudden rise at our fly, which took place from the enticing depth of the likely spot, and the determined rush of the big fish to his ominous fastness in his retreat, up-stream! Does not one still remember the strain on our delicate rod as its top bent down and down toward the water, in spite of the resistance we so anxiously offered, and the attendant anxiety we felt as to the staunchness of our gossamer leader, as we were forced to make our final attempt to stop this monster ere he reached the over-hanging mesh work of branches of the shelter he was striving for; and then alas!! the sudden shock as the delicate leader parted—and our rod sprang backward in its freedom, and our hopes—like the tiny waves of the trout's rush, on the mocking surface of the stream—died, as the ravisher of our fly gains the haven which he so richly deserves, leaving us—as such experience must have left many another fisherman—the richer, albeit the sadder, by the misfortune!

CHAPTER XII

THE SENSES OF TROUT AND HOW THEY AFFECT THE FISHERMAN

The Vision of a Trout—Horizontal Sight—Vertical Sight—These Factors as
They Affect the Fisherman.

I THINK it may be accepted as a fact that fish can distinguish the flavour of different kinds of food, but, so far as I am aware, it has not been decided whether it is their olfactory organs which are affected, or whether they possess a sense of taste only. The use of paraffin may cause a more rapid rejection of the artificial fly by the trout, but whether it might not be advisable to apply an odour to the body or hackle of a fly—similar to that of the real fly—remains to be proved. Fishermen have claimed that certain flavours are beloved of trout, but the result of personal experiment in the application of such flavours to the body of a fly is a branch of fly fishing still very much open to original discovery. I have experimented with various essences, and considered that I met with success by mixing two or three drops of the oil of aniseed with my paraffin-oil. This suggestion may be of some use to my readers, and perhaps induce them to continue such experiments until some perfect mixture has been discovered.

Trout are undoubtedly sensible to colour distinctions, and they can also detect the most subtle differences in the shade and tint of the different parts of the various

water insects on which they feed, whether the difference exists in the wings, the hackle, or the body of the fly. It is fortunate, therefore, for the fisherman that there are not only variations as regards colour in the individual members of each hatch of water insects, but also that trout do not always appear to exercise the power of discriminating which they undoubtedly possess, but will rise freely to the poorest imitations of the flies which are on the water.

I do not consider that trout can appreciate sound as we know it; rather are they gifted with a fine sense of all vibratory motion. Sound is communicated by the vibration of the air or other elements, but other vibrations of these elements can be produced without sound, and the trout may, therefore, depend on the tactile nerves rather than on the auditory ones. If trout were dependent on the faculty of hearing for their safety, and relied to any extent on this faculty to give them warning of a danger which might not be within their range of vision, I do not think that wading would be so productive of good results as it undoubtedly is. The noise of one's brogues on the pebbles can be distinguished when the ear is submerged for considerably over half a mile in perfectly quiet and unbroken water in rivers, and for miles in lakes.

THE VISION OF A TROUT

Although it is supposed that trout cannot see an object which is behind them—that is, in the direction of their tails, I am of the opinion that under certain conditions they can indirectly perceive the approach of any

object above the surface of the water, even when such objects is directly behind them, *i. e.*, in what I call the normal zone of invisibility. (See Diagram 15, C.E.D.)

I have noticed that however carefully I have approached from the lower end of a shallow, pebbly pool, unless my approach is masked by a heavy background of trees, the trout in the shallow and lower end take fright and run up into the upper or deeper portion. For many years, the uncanny quickness of trout in discovering my vicinity under these conditions completely baffled me, but curiously enough the explanation came to me when bathing in the Ifafa River, Swaziland. I had been swimming in just such a pool as I have described, and had drifted to the lower and shallow end. My body was resting on the pebbles, and my eyes were just above the water gazing up-stream, when my attention was drawn to a distinct lessening of the light on the pebbles in front of my eyes, and, slowly turning my head, I found two Reit buck standing on the bank of the river a little distance below me, and silhouetted against the clear sky, from which position they had appreciably lessened the light falling on the pebbles. Their curiosity had evidently been aroused, and they appeared to be looking at me intently. I did not move, but something frightened them, and they turned and bolted out of sight. The incident, however, solved the difficulty.

In shallow, pebbly pools the trout lie immediately over the glistening and reflecting surface of the pebbles. Any object, therefore, which comes between these pebbles and the sky must shut out some of the light which falls on them, and this lessening of the light they reflect must

warn the trout that some object is moving or approaching them from down-stream, and hence their movement up-stream.

HORIZONTAL SIGHT

If the eyes are assumed to be the centre of the horizontal plane in which the fish is lying, a trout, in ordinary condition, can see in that plane from a point right ahead to an angle of about sixty degrees behind each shoulder. In other words, any object situated in the 300 degrees of the forward part of the horizontal circle surrounding a trout will, as a rule, be visible, while any object situated in the remaining sixty degrees of that circle would be invisible. A friend told me some time ago of a case in which he had proved that trout can apparently see a body directly behind themselves. I admit that trout do become aware of a danger at times, when in the supposed zone of invisibility, but not when this zone is in the horizontal plane in which the trout is lying. It will generally be found that if an object be thus seen by the trout it ~~will~~ have been because the object has been lifted at some height above the surface, where the bulge of its shoulders would not intervene between its eye and the object, as it would if the object and the trout's eye were in one plane.

In Diagram 14, if A B C D represents the horizontal plane in which the trout is lying, E the eye, and T the tail of the fish, its eyes are naturally directed up-stream, and when in this position it can see any object in its own plane in the unshaded portion D A B C, and cannot directly see, without moving its position, any object in the shaded portion C E D. Hence it is that the fly fish-

erman, when within this latter zone, can generally approach his fish without being detected.

VERTICAL SIGHT

In any vertical plane passing through the eye of the trout, however, a different range of sight has to be considered, and an entirely new factor presents itself—this is the refractive influence of the water on all rays entering it. I need not here enter into the laws of refraction, but will ask my readers to accept as a fact that the vertical range of the vision of a trout, as regards all objects external to the water, may be regarded as being confined to the interior of a hollow cone, the apex of which cone is situated at the eye of the trout, and the sides of which rise upward, meeting the surface of the water at an angle of 42 degrees. So far as the fish is concerned, within this hollow cone—which, therefore, subtends an angle of 96 degrees in every upward direction—is confined the view of all objects within the 180 degrees vertically above the water. In other words, the trout sees, as it were, *all* objects above the surface of the water, within an arc of about half that in which these objects really exist, and consequently, the comparative size of these objects must be relatively smaller, in view of their being cramped into its smaller field of vision.

In order to make this perfectly clear to my readers, I have shown two diagrams.

In Diagram 15, E is the eye of the fish, from which rises a vertical cone, E A, E C, E B, E D, the sides of which cut the surface of the water as shown at A, B, C, D.

All rays of light from objects above the water *which*



THE GALWAY CAST MADE OVER THE TOP OF AN IMAGINARY SMALL TREE.



THE BACK MOVEMENT OF THE GALWAY CAST WITH THE TROUT ROD MADE OVER THE HEAD OF THE PHOTOGRAPHER.

reach the trout at E must enter the water within the circle A C B D. Let A E B (see Diagram 16) be a vertical section of the cone in Diagram 2, cutting the surface of the water at A B. Then the rays of light from M N can only

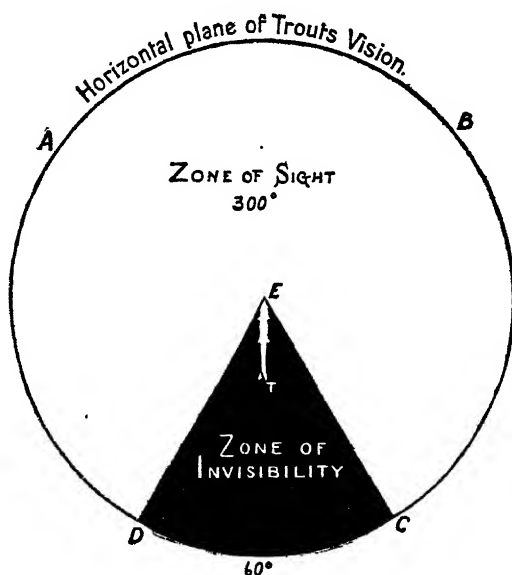


DIAGRAM 14.

A B C D, horizontal plane of trout's vision;

E T, trout;

D A C B, horizontal zone of trout's sight.

be seen by a trout situated at E, when they enter along the dotted lines, N B E, M b E, and the fish sees M N as in the direction b B, and also relatively reduced in size to b B.

Objects immediately over the trout will suffer least from the influence of refraction, but their appearance will suffer the more as they leave the zenith and approach the horizon.

To the trout, the full moon as it rises will appear as a small horizontal line of light forty-two degrees *above* the real horizon, and it will gradually assume its circular shape as it approaches the zenith.

It will thus be seen that the nearer an object is to the

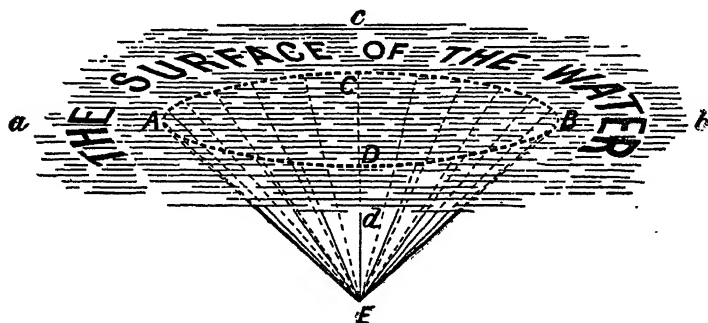


DIAGRAM 15.

a c b d, A B C D, surface of water;

E, the eye of trout;

E A, E B, E C, E D, the upward cone within which is confined the trout's sight of all objects above the surface of the water within the range of the trout's vision.

water level when outside the water, the less will be the angle which it will relatively subtend to the fish; in other words, the lower the position of an object when at equal distances, the smaller it will appear to the fish.

THESE FACTORS AS THEY AFFECT THE FISHERMAN

This important fact is taken advantage of by the fisherman, who, although he may not understand the optical laws of refraction, has learnt from experience that, in order to avoid scaring the fish, he must crouch as much as possible, and thus reduce his height, and that an over-

head cast is more likely to scare a fish than a side cast. Not that he escapes being seen when within the limit of the trout's vision, but his bulk and that of his rod are *then* generally insufficient to frighten the fish seriously.

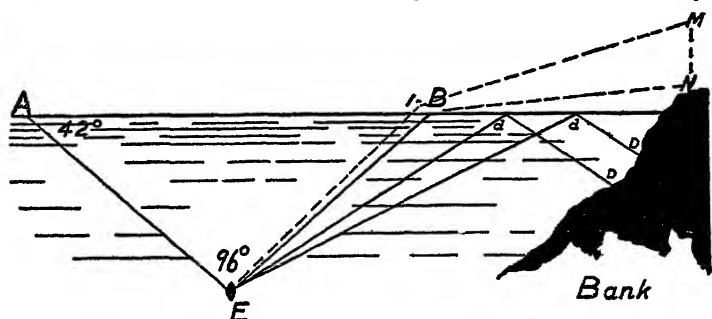


DIAGRAM 16.

A E B, a vertical section of the hollow cone in Diagram 2, cutting surface of water at A B.

M N, any object on land, such as a man.

E b M, E B N, the lines along which the rays of light from the man M N will travel to the fish.

E b, E B, the direction in which the trout will see the man.

d D, E d D, the lines showing how the under surface of water acts as a mirror to the trout of all objects under the water and outside the cone E A E B. Any object which breaks the surface outside the circular base A B of the inverted cone A E B will be visible to the fish at E.

Wading is for this reason the best method of approaching fish. Although a man's size is relatively reduced the more nearly he sinks to the level of the water, still, in ordinary circumstances, he is clearly visible on the trout's horizon when within that part of the zone D A B C, Diagram 14. If, then, this appearance is accompanied by an invariable agitation of the surface, or the violent appearance of lines or flies over a trout's head, even the most unsophisticated fish will quickly learn to associate these two phenomena, and be increasingly ready to take fright when a man is seen. Hence the necessity for

caution when approaching a fish, and delicacy and finesse when casting on the part of the fisherman—not only on his own account, but out of consideration for his brother anglers. The lifting of the line from the water when making the backward cast should be effected in the smoothest and the most delicate manner possible for the latter reason.

All other downward rays coming to the eye of the trout, save through its window, the arc subtended by the trout's vertical vision, are external to the cone, and are either from the submerged portion of some floating object, or the reflections from the under surface of the water of sub-aqueous objects, the water, in this latter case, acting outside this zone as a huge mirror of all bodies below its surface. (See *E d D*, *E d D*, Diagram 16.)

It must not be supposed that this mirror is an unbroken one, for every object falling on and *breaking* the surface of the water, becomes at once visible, not only within the zone *A B C D*, Diagram 15, but outside this zone. This is an important point, and is one which is but too often overlooked by the fisherman. I have frequently met people who imagine that, because they throw their line so that it does not fall within the circle *A B C D*, they are, by so doing, preventing the trout from seeing it. When coaching Major Sir William Evans Gordon, in 1909, I was explaining the method of avoiding the drag by throwing the line so that it fell in an *up-stream curve* on the water, and he suggested the advantage that this cast would have in presenting the fly to a fish immediately up-stream. He was correspondingly

disappointed when I explained to him that this would have little or no effect, so far as the vision of the trout was concerned, for whatever advantage there might be in preventing the line from falling directly over the fish, it would be equally, if not more distinctly, visible to the fish as it broke the surface to either side.

It may be taken for granted that, in ordinary circumstances, when a fisherman can see the trout the trout can see him. There are, however, three influencing factors, which must always be considered:

1. The amount of light falling on either.
2. The glint or glare in the eyes of one or the other.
3. The background of each.

1. The first may be considered as sometimes favouring the fish and sometimes the angler.

2. The second factor will be mostly in favour of the fish; the fisherman gets most if not all of the glint and reflection from the surface, though the glare of the sun must handicap the fish to a great extent.

3. The third factor is the background, which, however, is almost invariably in favour of the trout. A dark background is of the greatest importance to the fisherman when approaching a fish, and a skyline behind is always to be avoided. If, when fishing from the bank, he has no near background, such as a wood, a hedge, a wall or tree, etc., he should be as little above the water level and as much behind the fish as is possible. Wading, again, for this reason, will be the most advantageous position for the fly fisherman.

It may be argued that the appearance of the waders

below the surface, when within the zone of the lateral vision of the trout (see the unshaded portion of Diagram 1), will scare the fish more than the appearance of the fisherman above the water. This is not so, however, for the rays of light from the fisherman on the bank, say at forty feet distance, would lose nothing in passing through the air till they strike and enter the water (as at *b* B, Diagram 3); they will then only have some two to four feet of water to pass through before reaching the fish. A certain amount of light will be undoubtedly lost, even in this small distance, owing to the density of the water, but the vertical depth of the fish below the surface of any trout stream will never be sufficiently great to prevent all rays reaching it. This density of the water will cause a very rapid diminution of the rays from any sub-aqueous object, as horizontal or vertical distance is attained; and while objects may, in favourable circumstances, be still visible to the fish twenty-five feet away, in any horizontal direction within the zone of its horizontal sight, they may in calm, still waters be taken as being unnoticeable in ordinary circumstances at a distance of about thirty feet. In rapid running water the rays from any object will be still further lost or deflected by the eddies, etc.

From my own experience in a diving-dress in the comparatively clear waters of the Torres Straits, which were undisturbed by any ripples, eddies, etc., I found that all objects in the horizontal plane were invisible to me beyond a distance of about twenty feet: the head of a shark coming towards me would be visible at about seventeen feet, while its tail would at the same time be quite invis-

ible and lost in the misty wall surrounding me.* It may be, therefore, confidently assumed that the wader, even when faced by the trout, will, as far as his waders are concerned, be unnoticed by the trout at a distance of from twenty-five to thirty-five feet.

*While this limit to my range of sight may have been due, to a certain extent, to the thick glass of the helmet through which I had to look, the greater part of it would be due to the absorption of light by the water itself at the depth I was walking in.

CHAPTER XIII

THE ACTION AND QUALITIES OF A PERFECT TROUT ROD

Baden-Powell and Testing Rods—A Mechanical Test—The Hand Test—A Correct Method of Testing—The Action—The Consideration of a Stiff and of a Whippy Action in a Fly Rod—The Perfect Rod—The Treatment of a Fly Rod—Tournament Rods—Points to Remember when Selecting a Rod—The Leonard Rod—The Virtues or Otherwise of a Dry Fly Rod.

IT will be generally admitted that as regards the construction of the weapons and appliances used in the various fields of sport, none can excel, and very few equal, in science and delicacy of their make, the modern split cane fly rod, the tapered line and leaders, the reels, artificial flies, etc., etc., which are now used in fly fishing.

It is necessary, however, to consider most carefully, not only the qualities which constitute a perfect fly rod, but the difficulties which beset the judicious selection of one.

BADEN-POWELL AND TESTING RODS

A method of testing some of the qualities of a fly rod was introduced and advocated some years ago by, I think, Mr. W. Baden-Powell, K.C. These theories were exhaustively examined and discussed in the sporting press, etc. The originator of this method of testing a rod suggested that the butt end of the rod should be securely fixed in some mechanical holder, the rod being inclined to the horizontal at various angles, and that a definitely considered weight should be suspended from

its top ring, the idea being that the curvature of the rod, the exact distance extended horizontally by this plummet on a base line, and its rate of vibrations should be compared with the curvature, vibrations, etc., of some rod, whose length, weight, curvature and vibratory action was standardized, this test affording some indication of the relative qualities of the rod tested.

I think that the strength and the vibration of a finished rod can thus be compared with other rods, and that the method of a base line as suggested by Mr. Baden-Powell, in conjunction with a consideration of the curves made by the rod when subjected to pressure, is effective, simple, and ingenious.

It must be recognised, however, that such a test could afford no indication of that most important quality, the "action" of the rod on the holder in which it was fixed, and therefore the information derived from such a method would be of little use to a fisherman when selecting a rod, for his hand would have to take the place of a holder used in such a test.

By the action of a rod is hardly meant its amount of whippiness, its balance, its rate of vibrations, its power, etc., but rather a something which affects the hand, wrist, and forearm of the holder, and which is the direct result of these combined qualities.

A MECHANICAL TEST

When handling a rod we speak of its having a delightful action or the reverse, and we judge of this by its influence on the hand which holds it. The term "action" therefore is, or at least should be, used as a separate term

to be applied to the feel of the rod, which is a result of the combined influences of its other qualities.

Now the mechanical test introduced by Mr. W. Baden-Powell gives no clue to this influence, *i. e.*, the action of the rod on the vice or holder in which it is fixed. The rod, then, which produces the least hit or jar on whatever may be the holder in which it is placed is that rod which will be the most pleasant to use, and, provided its other qualities be equally good, will permit of the greatest accuracy and delicacy in casting.

A test made in any such mechanical manner cannot be of any service in answering the question as to what effect the action of a rod has on the wrist and arm of the fisherman. It is the senses of the fisherman alone which must be his guide as to this action, and if he be inexperienced, and the particular sense required to test the action of the rod on his wrist has not been educated, he will, if he makes his selection in a shop, most likely err in the choice of a rod.

THE HAND TEST

If we take the top end of a three-piece rod, and, holding it inflexibly in one hand, we try its action by striking or switching it backward and forward, we shall most likely say what a beautiful, quick action, etc., it has. If we then take the middle joint of the same rod, and do likewise, we shall say that its action is awkward and stiff, and if we take the butt end we shall still more emphatically condemn its action, etc. Now, fixing the two upper joints together we shall find that the stiff action of the middle joint has to some extent been modified,

and when we fix the three joints together we may perchance say—What a perfect action! But it must be at once evident that as the forearm constitutes another joint, the rod is, when thus tested, a four-joint rod, and its perfection really depends upon the relationship of the upper three pieces to the fourth piece—the forearm.

A rod, when tested in a mechanical holder, may have a rate and degree of vibrations approaching that of the most perfect rod, and yet when tested by those members which have to control and actuate it, viz., the hand, the wrist, and the forearm, may be intolerably severe on the wrist.

A CORRECT METHOD OF TESTING

It is evident then that a test should be made by the hand, but equally, also, that it must be made in some well-considered and definite manner. Obviously a very varied effect will be produced on the senses by the same rod, if the wrist be used, in one case, as a well controlled extension of the forearm, and in the other simply as a more or less controlled hinge between the forearm and the hand. If a more or less rigid and weighty stick be used, as in the backward or forward motion of the fishing rod, its backward action being checked—as that of the rod should be—by the thumb, at a point about twenty-two degrees behind the vertical, and again checked as it should be at the end of its downward stroke, a certain hit or strain will be felt on the wrist as the momentum of the rod is stopped. The amount of the hit or strain will be an index as to how much the elasticity of the stick, or butt end of the rod, fails to blend its

vibrating elasticity with that of the arm, wrist and hand. If the same stick or bar be brought backward and forward, and the wrist be permitted to yield to the momentum of the stick, this hit or strain will not be so immediately appreciated, but nevertheless the strain of this hit, though it does not at once become apparent—as it does when it is checked with a stiff wrist under the control of the thumb—will yet affect the muscles which control the wrist which are called into play, and the greater the hit or jar, the greater will be the strain and, also, the more pronounced will be the fatigue, as the day lengthens.

THE ACTION

By far the most important factor which contributes to the perfection or the non-perfection of a trout rod is that which centres round this word—Action. Provided it is made of the best cane, and that its centre of balance is only a few inches beyond the end of the thumb, when the rod is being held horizontally with the reel on, and the line in position, and that the rod is properly tapered, the “action” of the rod is the principal factor which determines its perfection.

The weight of a good split cane trout rod may vary from three-eighths to seven-eighths of an ounce per foot, up to a length of $9\frac{1}{2}$ feet, without affecting its usefulness or the comfort of the angler. A dry fly trout rod should be about 9 feet 6 inches in length, and, always provided that the action of the rod when ready for fishing is centred so that no appreciable hit is noticeable in the wrist, when the rod is checked in its backward or

downward action, the less whippy the rod is, the better will be its casting power and its excellence as a dry fly rod.

THE CONSIDERATION OF A STIFF AND OF A WHIPPY ACTION
IN A FLY ROD

If we can imagine a rod which could be built absolutely rigid from butt to top ring, it would—during the back cast—when the hand controlling it had reached its back limit, have done all it could do, as regards transmitting the force of the arm, and would be powerless to affect any farther the backward movement of the line; therefore, unless the necessary lifting and backward impetus to the line had, by then, been imparted, the back cast would be a failure.

It follows that with an absolutely stiff rod, the upward and backward action necessary to effect the backward extension of the line must take place while the hand is moving, and however much force may have thus been applied by the hand, no after assistance will be obtained from the rod, as its backward action will cease with the stopping of the hand action; it has acquired no latent force, *i. e.*, no bend, and has therefore no further energy to impart to the line.

Under these conditions, the energy employed to make a successful back cast with such a rod would necessarily be of a more rapid and violent nature, and, even if effective, would result in a most prejudicial disturbance of the water as the line was jerked backward; the longer the line the more would this fault develop. This of course refers to a perfectly stiff rod.

If absolute rigidity of the rod disappeared, and whippiness began to appear, a less violent jerk would be required to effect the backward cast, and as whippiness increased, the jerking action would become unnecessary and would disappear and devolve into the upward and backward switching movement.

In the other extreme—an excessively whippy rod—on the backward effort being applied, it would rapidly acquire such a bend that the hand would have reached the end of any possible backward extension long before enough energy to conquer the frictional resistance of the water and project the line backward had been imparted, and whatever latent energy had been retained by the rod, it would not be sufficient to extend the line and fly backward to its right elevation with anything like the *vim* required.

THE PERFECT ROD

The perfect rod for each fisherman should enable him, by a movement of the forearm from its horizontal to the vertical position, to pick up off the water, easily and quickly, and to extend correctly backward, such a length of line as he may require to use. The relative stiffness of a rod affects its casting powers, and its whippiness affects its delicate adaptation of the force applied in casting, striking, or playing the fish.

The more perfect the rod, the less is the danger of disturbing the surface of the water when making the back cast, or of breaking the fine point of the gut cast when striking. The pliability of the rod counteracts, to a very great extent, the fault of snatching the line off the water

in the back cast, or of a too forceful strike at a rising fish. But here the advantage of the whippiness of a fly rod ends, and the advantages of a stiff rod have to be considered. Always assuming that in other respects the rod is perfect, its delicate stiffness will permit a more direct impulse to be communicated to the line, both in casting and in striking, a longer line to be picked off the water, a greater length of line projected in casting, a greater mastery over the fish when hooked, a better result when casting against the wind, and a greater accuracy. Hence it is, that when the vibrant qualities of a rod are sufficiently brilliant to secure an all round excellence in these latter qualities, and when its balance and action blend themselves into the muscular and sensitive qualities of the forearm of the user—the perfect rod is recognized.

THE TREATMENT OF A FLY ROD

The rod, which in the hands of a skilful and reasonable man will last for a lifetime, will in the hands of another soon become strained and warped, either by playing a fish heavily, striking abruptly when using a long line, or by trying to jerk the line off the water, instead of picking it off gradually, when making the back cast.

A fly rod should be used only as a fly casting rod, and never as a trolling or spinning one. The stiffer the rod—all its other qualities being perfect—the greater the distance which can be covered and the greater the command when striking and playing a fish.

The casting power of the rod depends on the amount of line which the rod can raise from the surface of the

water. The relation of the line to the rod must, therefore, be very carefully considered, and a line whose taper and weight suit the strength of the rod used by the fisherman should alone be used. The influence of an over heavy line on a delicately actioned rod is just as bad for the rod, as is that of a too light line on the pleasure of casting the fly.

It must be remembered, when choosing a line, that the lighter the tapered line the less strain on the rod, the less disturbance to the water as the line falls, and the greater the ease of lifting the line lightly from the water. The usefulness of a line has as a rule gone when the tapered portion is worn out, and as it is the tapered portion which invariably goes first, the belly, or thicker portion of the line, which in other respects will be quite sound, may, if too heavy, be useless for the delicate work on most of our dry fly streams.

TOURNAMENT RODS

However interesting Fly and Bait Casting Tournaments may be, it is very questionable whether they have really tended to improve either the methods of fishing or the construction of the fly rod. Only a few competitors enter for these contests, and but little advance in the art of fly casting has, so far as I know, been evolved as a result of these tournaments. For a maker to claim that his fly rods must be the best weapons to fish with, because one carefully selected rod, out of several thousands which he builds, has, in the hands of the most experienced fly thrower he can get to use it, projected a fly, or thrown a bait, etc., a few inches or a few feet

further than another of his own rods, or the rods of other makers, is as absurd as it would be for the man who makes the longest cast of a fly, etc., to claim on this account any superiority in his methods of fishing over other men.

While tournaments may be used as a convenient means of advertising rods and rod sellers, such distinction has led many inexperienced buyers to invest in rods which are neither suitable nor pleasant for fishing purposes.

POINTS TO REMEMBER WHEN SELECTING A ROD

The greatest care, nay—caution—should be adopted when purchasing a rod.

It is better, in every case, for even the most experienced fisherman to take home for approval the rod he may fancy in a shop, and to try it with a line for some ten minutes over water, or on his lawn, and also compare its casting properties with some well-tried rod, before deciding on its purchase. If the novice cannot by such means select one, he should obtain the advice of some experienced friend, before he finally decides on his rod.

The action of a rod cannot easily be judged in a shop. The muscles which are used in such a trial are unfatigued, and the space and time for the trial are both too limited to permit of the ill effects of the faulty action of an ill-made rod to be realized, or those of a good rod thoroughly appreciated.

If it were possible by machinery to convert a bamboo from its virgin state into a split cane rod in its finished condition as seen in the shop, a standard rod might, under

certain circumstances, be obtainable. But bamboos differ, and are not always of an exactly equal degree of excellency, and however even or similar in appearance a shipment of bamboos may be, each bamboo will have its own individual quality, strength and elasticity, and therefore, for this reason alone, if a machine-made rod were possible, a considerable difference would exist in each rod. When it is remembered that not only do bamboos differ—that more than one man is employed in making each rod—that each of these differ not only in their sense of touch, experience, and judgment, but in their moods and capabilities, and also that the meteorological conditions vary, and consequently influence differently the building of rods, it will be recognized that no two rods can—except by an accident—be made with an exactly similar degree of action, balance weight, elasticity, stiffness and vibration. It is by the educated senses of the experienced fly fisherman alone that an accurate judgment—as to the various factors which go to make a good rod—can be formed, and such a rod selected, that at the close of a day's fishing it will be found as effective and pleasant to use as during the first few moments in which it is handled. Excellent as were my rod builders, and thoroughly as they devoted themselves to the work of building my rods, carefully as I tested and passed all such rods, still each rod had its individual balance and action, which incline it towards perfection or the reverse.*

To claim, therefore, that any fishing tackle firm has

* The author is alluding to the F. G. Shaw fly rod, which he formerly had built in England.

some secret knowledge or method as to rod building, which—without that personal testing which I consider necessary—will ensure that every rod they may label with some particular name must possess a similarity in its good—or bad—qualities, is merely bluff, but it is bluff which has deceived, and may still continue to deceive, the novice. Further, it has often this bad effect—that a beginner, purchasing a rod, the name of which is supposed to be a guarantee of its excellence, may probably find his casting spoilt, and his pleasure marred, by a smart looking rod which, after an hour's fishing, will become, from its action on the wrist and forearm, both difficult and painful to use.

The introduction of split cane—that is split bamboo—as a material used in the construction of our fishing rods, we owe to our countrymen.

In so far as the experience of the Author extends, no other nation has been able to produce such a general all-around excellency in the material and make of its Fly fishing rods as have the Americans.

Their Fly rods undoubtedly take the pride of place. They are light, durable, full of power, and generally have excellent action.

I have used a four-ounce Leonard rod for over twenty years for pretty constant Fly fishing work in different parts of the world, and although this rod has at last become the property of my wife, I love to be allowed to use it, for I still find it the best of all the light rods I possess, and a joy and delight to use.

THE VIRTUES OR OTHERWISE OF A DRY FLY ROD

The excellence of a trout rod lies in this—that not only should it be capable of conquering the fish you hook, but it should possess such a well-balanced, tempered action and weight that it will, when in use, so blend its action into that of the forearm as to appear, so far as the sense of feeling and touch are concerned, to be but a continuance of the forearm itself.

Tournament casting must be regarded in the light of a new sport, which while interesting, and maybe useful, so far as records are concerned, tends but little to improve the practice of fishing. The records now made by the best long distance casters have long since passed the limit of usefulness, and especially is this so as regards fly casting. The rods used in casting tournaments, not only in this country but elsewhere, for distance casting, are not rods with which one would choose to fish. A heavy rod may be useful—to a man who is strong enough to cast with it—when it is only required to make a very long cast, or when either from weeds, heavy fish, or owing to the vicinity of dangers, drastic measures have to be adopted after a fish has been hooked, but in my opinion a nine foot six inch single-handed rod is about the average length of a really useful wet or dry fly weapon, and for comfort as well as delicacy the action of such a rod should blend its virtues into those of the forearm.

CHAPTER XIV

PISCICULTURE AND THE NATURAL HISTORY OF THE TROUT

History of Fish Culture—Consideration When Breeding Trout—Mr. Livingston Stone—Dangers to Young Trout—Spring and Brook Water Compared—Temperature and Activity of Trout Streams—Experience on African Trout Waters—Changing Temperatures—A Lucky Catch—Dam Water—The Food of Trout—Influence of Cold or Warm Weather—Rapid Increase in Weight of Trout—Trout and the Close Season—Times of Spawning—Close Season—The Population of Our Trout Streams—Fish and Fish Food—Dealing With Natural Foods Carried in the Stream—Plentiful Supply of Water in Trout Streams—Water Insect Life—Dangers of Road Pollution—The Work of the Press.

HISTORY OF FISH CULTURE

ALTHOUGH dating back to the early Egyptian dynasties, fish culture received its first great impetus in the middle of the eighteenth century, when the possibility of artificially fecundating the ova of fish was discovered by one Stephen Ludwig Jacobi, of Hohenhausen, in Westphalia. It was not, however, until 1837 that fish culture was inaugurated in Britain by a Mr. John Shaw, who fecundated the ova of salmon and reared the young fish.

Trout farms or hatcheries are now established throughout the world, and the student should not only read the literature of trout breeding, but also, by personal visits to any trout-rearing establishment in his vicinity, gain a practical knowledge of the life and breeding of the fish, which he will, in future, have to encounter.

CONSIDERATION WHEN BREEDING

It is of the utmost importance to secure strong and healthily reared yearlings and two-year-old fish, for all streams, lakes, and ponds which are being restocked, and the more nearly the conditions in which the fry, the yearlings, and the two-year-old fish are reared, approach those of nature, the better will the results be. Mr. Livingston Stone, a Fish Commissioner of the United States of America, guided by his great experience as a trout breeder and as a fishing commissioner of the United States, contributed a classic on Trout breeding* for the information of the world, and it is doubtful whether any other book will supply, so fully and so clearly, information of so much of interest to the fishermen as the later editions of his "Domesticated Trout."

Experience and investigations will admittedly tend to supply further knowledge on this interesting subject, but the basis on which advances will be founded will be found in the matter contained in Mr. Livingston Stone's work.

DANGERS TO YOUNG TROUT

The different dangers to which young trout are subjected may be classed as follows:—impure water, sediment, different forms of fungus and the attacks of nearly every form of insect and animal life which is to be found in the neighborhood of, or in the water of, their stream.

SPRING AND STREAM WATER COMPARED

In all matters connected with artificial spawning and during the early days of trout life, the manager of a

* Domestic Trout—1872.

trout breeding establishment should select water as organically and chemically pure as possible. In the stripping and after treatment of the ova and the milt, and until the alevin stage is passed, it is better to procure water which comes from a spring of regular temperature, of recognized purity and of an even flow. Such spring water, however, lacks most of the flesh forming qualities which brook water possesses. The latter is warmer and, as a rule, possesses many excellent properties which can only be imparted to it by the action of air and sunshine, and therefore, after the yolk-sac has disappeared, it may be better to introduce an ever increasing quantity of brook water, from some very carefully selected trout stream, adding more and more of this water to the troughs at each stage of the trout life. In brook water, there is a certain quantity of earthy matter which appears to act with medicinal value and thus to profit the fish.

Miniature waterfalls are of great value between each of the water channels in a hatchery, especially when these falls have sunlight, and they then form invaluable adjuncts in all trout breeding establishments.

Taking the stock fish of the ordinary trout-breeding establishment, the length of time which it takes them to recover from their breeding operations may be greater owing to a restricted flow of water.

Fungus will not be so easily shaken off, neither will the wounds and abrasions of the breeding-time be so quickly healed. It may be accepted as a fact that trout, after the alevin stage, should have plenty of water, plenty of space, and plenty of food, and the more nat-

ural the conditions of these, the better the results in trout breeding.

The effort which is demanded from young fish in order to resist the natural movement of a plentiful supply of running water creates a more developed and more powerful fish.

To those, therefore, who may be inclined to devote their attention to trout breeding, I would recommend the selection of their hatcheries and of their breeding pounds situated, *when possible, and where safe*, if not in, at least in the immediate vicinity of, the best portion of the best trout streams available.

THE TEMPERATURE AND THE MOTION OF THE WATER IN TROUT STREAMS

The temperature of the water in a trout stream, as it affects the well-being of its inhabitants, should always be considered in relation to its activity. High temperature in the water of a sluggish stream will exert a more unfavourable result on the fish it contains than will a higher temperature on the same fish in a more rapid stream; slow moving water will exert an unfavourable influence on brown trout before its temperature exceeds sixty-five degrees. When engaged by the South African Government in reporting on the conditions relating to trout in the South African streams, conditions, etc., in 1921, I found the temperature of these streams and rivers to be one of the most important factors in the problem I was asked to investigate. I reported in some instances, that the trout streams registered at their surface a temperature of eighty-two degrees (82°) and yet,

because these streams were rapid and well oxygenated, they were holding in their deeper portions vigorous and healthy Brown and Rainbow Trout. This high temperature was obtained on the surface of shallow stretches, generally having a pebbly or rocky bottom, but high as it was, it did not greatly affect the temperature of the water in deeper portions of these streams, even on the warmest days. In the deeper holes, the temperature of the water registered from 60 to 68° according to its depth and the sheltered nature of the banks. The more heated water from above, after tumbling down the rapids and entering the stream below, failed to affect prejudicially the water in the deeper pools below a level of from three to four feet, and both brown and rainbow trout taken from the depth of these pools were found to be full of vigor and in good condition. So long as they remained well down in these deeper portions of these streams, the warm water near the surface did not affect them, although the warmer water near the surface seemed to kill their resistance, as they were brought up to the surface by the fishing-line. Such fish did not feed on the surface at all during the day time, save only on cloudy and cool days, and the lures which were used, therefore, had to be fished well down during the day, and not fished on the surface at all, even at night, until the temperature of the water had fallen.

EXPERIENCE ON AFRICAN TROUT WATERS

On January 14, 1921, when fishing the Berg River in the Cape Colony, during a spell of exceptionally hot weather, I found that at its junction with the Sma Bla

River—the latter being a narrow and well protected stream, shadowed by foliage and trees, and supplied by springs of a considerably cooler character than the Berg River—there existed a very deep water hole well shaded by trees, and as I knew by report that several large fish were supposed to shelter in the deeper waters of this hole, I tried it, but with no result, and found no indication of moving fish. The sky, however, became overcast, a cool wind coming from the surrounding mountains with a little cold rain, as I rested and took my luncheon, the temperature of the water and of the air falling very considerably.

After a pipe, I started fishing again at 3 P. M. with a light-winged, golden-ribbed May Fly, and fishing this pool dry well in the shelter of the trees, I succeeded in catching six large rainbow trout, the smallest of which weighed over two pounds. The fish, when they rose, came boldly to the surface and at the floating flies. The surface of the water was roughened by the wind which was steady and the sky overcast. It was one of those lucky opportunities which sometimes come to fishermen, of being on the right spot, at the right time, and under the right meteorological conditions, and having an attractive fly.

CHANGING TEMPERATURES

At 4:30 P. M. the sky cleared—the wind fell, the temperature rose, and the fish ceased to rise. I took a series of temperatures of this particular hole, and found that at its lowest depths (13 feet) the temperature was 61°. At one foot below the surface the temperature was 67°, but the surface temperature of the water on the flat

above was 74°. Two of these trout, one weighing 3¼ pounds, took me down-stream into the more shallow and warmer water, where their resistance ended quite suddenly, and when they were taken from the net they were comparatively lifeless.

A LUCKY CATCH

This pool had been fished over for some weeks previously and, so far as I could learn, with no success. The weather had been hot and it is quite possible that trout could have been taken out at night time. The fish were in good condition. I attributed their rising on this occasion to the sudden lowering of the temperature in this water.

The temperature on the surface in some of these African mountain streams, owing to their altitude, frequently reached a very low point after midnight, but the Brown trout were perfectly healthy, and remained in the deep portions of these upper reaches notwithstanding the subsequent daily rise in temperature. The highest surface temperature I experienced in a Cape Colony *Trout* stream was 83°, but even then trout were being taken out of the big deep holes between 11 P. M. and 2 A. M.

DAM WATER

The surface waters of a dam may be found of far too high a temperature to be used in the fish hatchery situated immediately below it, and however much it may be broken up and oxygenated as it falls over the face of the dam, it will prejudicially affect the fish in the pounds and troughs in the hatchery. But in spite of this surface

temperature, the water may be found to be cool enough for hatchery purpose, if the dam be deep and if the water be drawn from the deepest levels of the dam itself.

THE RELATIVE VALUE OF FOOD STUFFS FOR TROUT

The best food for trout, as long as a plentiful supply is available, is undoubtedly water insect life in its varying stages. Small fish, such as minnows, gudgeon, etc., are the next best food—although trout, when fed on this latter class of food, frequently develop cannibalistic tendencies—while probably the food least beneficial, in an all-round sense, is the animal food on which hand-fed trout have frequently to depend.

The relative value to trout of the different varieties of food stuffs may be roughly estimated as follows:—

If water insects in their natural larval or flying conditions are reckoned as having a food value of	100%
Then, meat if given as food, has a value of about	50%
Fish has a value of about	38%
Cereal or bread stuff has a value of about	12%

There also appears to be a distinction, attendant on their food, in the habits of the young trout, the insect eaters being proportionally more active and better shaped. The phenomenally large size to which New Zealand trout attain is largely due to the presence in New Zealand waters of a very great quantity of small silver-hued fish, locally called Whitebait, but from my own experience I think that, weight for weight, the fish which live on this Whitebait do not prove to be the best fighters.

INFLUENCES OF COLD OR WARM WEATHER

Variations in the temperature of the air and water exercise a most important influence on aquatic life.

A certain relative increase in the temperature of water after a cold stretch of weather quickens the incubation of all sub-aqueous eggs, and hastens the metamorphosis of all insect life and is of course productive of better fishing.

RAPID INCREASE IN WEIGHT OF TROUT

Under favourable circumstances the growth of a trout is rapid. Trout from the upper water of many rocky streams, where temperature is low or natural food is scarce, are small, but these fish quickly grow to a large size when reaching the lower, warmer and more food producing reaches of these streams, or when they be transported and placed in the more productive waters of ponds and reservoirs. Trout will feed better in fairly temperate weather than when it is cold, and a rise in temperature, after a cold spell, is productive of good sport, due to the improved appetite of the trout, etc. Trout lose their desire for food as the spawning time approaches, and though they commence feeding after it is over, they do not regain their full fighting powers until they regain good condition later on.

TROUT AND THE CLOSE SEASON

I am inclined to think that to the majority of trout fishermen the natural history of the Salmonidæ is as a sealed book. Fishing to them is but a pastime, to which

many delightful hours of their outdoor life are devoted, and, save during the moments which are spent in the actual pursuit of this sport, their interest in these game fish and their surroundings seems to disappear.

The life of the trout during the close season is practically unknown to the average fisherman, and while the necessity of observing such a period is recognized, the wisdom of the limits imposed by the various fishing associations is but seldom appreciated and receives but a small proportion of the consideration which so momentous a subject deserves.

TIMES OF SPAWNING

It may be taken as certain that the general limit of the period during which wild and domesticated Brook and Brown trout spawn is from October 15th to the end of January, although trout are known to spawn as late as the middle of February. The average period during which most trout spawn, however, may be accepted as occurring between October 25th and middle of January, the temperature of the weather and the amount of water in the rivers considerably affecting even this early or late spawning season. Trout in their natural condition appear to suffer a loss of appetite, commencing from eight to three weeks prior to spawning, this loss of appetite depending to a considerable extent on their condition toward the end of the fishing season. If the trout have experienced a fine summer, with plenty of food in the shape of insect life, their condition early in the autumn will be good, and a more extended period of fasting may be expected prior to spawning. In some cases they begin

to feed after spawning, and, if the circumstances are favourable, will be clean and in good condition from three to six weeks afterward. If, however, the weather conditions are unfavourable, they may not commence to feed for some time after spawning has ceased, and their complete recovery will be relatively delayed.

The importance of a careful consideration of the above facts when deciding the limits of the close time will be better appreciated when it is thoroughly understood that from the time the fish begin to lose their appetite, prior to spawning, until they have recovered their condition, after spawning, they are unclean and not fit for food.

CLOSE SEASON

Fishermen whose experience has extended over many districts, and who have fished early and late in the season, frequently report the capture of ill-conditioned or dirty fish after the beginning, and before the close, of the different open seasons. Such fish should, of course, in all cases be returned to the water, but would it not be wiser that the chances of handling or injuring such fish should in no case be incurred?

As meteorological conditions affect the time of spawning, so, also, will they affect the length of the period which it takes a trout to recover after its spawning operations are over. This is especially so in the wild fish. Even in the same districts spawning conditions vary considerably; not only the temperature of the atmosphere, but the temperature of the water in two neighboring streams, will produce a relatively early or later spawning season. The locality of the rise of each river should be consid-

ered, as well as the rise of each of its tributaries. The snow-fall and the meteorological circumstances of each season might be carefully studied; and before any hard-and-fast periods are selected for the opening and closing of the trout fishing season, the dates might be modified to suit these peculiar circumstances of each river and each season. The fish on the first warm days of the season are generally ravenous, and at such times they will take any bait, no matter how unskillfully it may be offered to them. As a natural consequence, the rivers lose many of their best fish before the latter are in a condition either to discriminate as to the choice of their food or to have a sporting chance of successfully fighting for their lives, to say nothing of their being, in such cases, not at their best for the table.

DEPOPULATION OF OUR TROUT STREAM

If the authorities controlling trout fishing would, in the interests of the rivers they control—consider the causes which lend to the depopulated condition of these rivers after June and July, effective methods of stopping the capture of unfit fish and checking the ravages of the baby trout snatchers might be introduced.

Local fisherman on many Eastern streams seem to regard their fishing as over by the end of June, and judging by the big creels which they are able to obtain in May, it is little wonder that the rivers are left with but few trout, in them, to repay the attention of the summer visitors, whose dry fly but too frequently falls on waters from which most fish, of a takable size, have disappeared. With late spawning fish and a very hard spring, it must

be a mistake to permit trout fishing until the great majority of fish in each particular river have recovered their condition. Rivers in which the trout spawn late very frequently produce good results, as the alevin hatched in them emerge from the eggs under more favourable conditions, so far as temperature and weather are concerned; but in each district, whether it be relatively early or relatively late in its spawning, contradictory as it may seem, the early spawners produce the best and strongest fish.

FISH AND FISH FOODS

The falling off in the number of fish which are taken year by year during the summer fishing season, on some of the well-known public trout waters, is by no means an uncommon topic among Fly fishermen. The general opinion expressed about this decline, condemns over-fishing.

With every other factor in a trout fishing proposition remaining the same, but with an ever increasing number of those who fish over it, the result is a foregone conclusion. But there are certain factors, and certain regulations which, if wisely considered and honestly adopted, may help to counteract this evil.

First—The wise and liberal stocking of the stream with suitable trout.

Second—The restrictions which can, with wisdom, be placed on the number, and on the size, of the fish caught by each rod during a day's fishing.

Third—The improvements which can be made in the character and in the flow of the water of the stream, and

also in the quantity of the food which can be carried by the stream, and on which the trout flourish and multiply.

The general value of the first and second factors will be admitted, but the third is one which is not so frequently considered, and is worthy of attention, and of special treatment, also of regulations, which, if judiciously adopted, will mean a future increase in the number and in the condition of the trout which inhabit the stream.

DEALING WITH THE NATURAL FOODS CARRIED IN THE STREAM

The falling off in the number of the fish in a trout stream may be only a relative one, due to the number of the fishermen, the improvement in their methods of fishing, and to the competition which is sometimes encouraged, among certain of the early fishermen, on each stream.

If, however, the falling off be due to the insufficient supply of those food stuffs on which the healthy growth and the number of the fish depend, the food conditions may be altered and the stream may be made to carry a sufficient underwater supply of food stuffs to keep a good head of trout in condition, to prevent the cannibalistic tendencies of the older trout, and to provide a certain number of Fly fishermen with excellent sport. That is, of course, if they fish as sportsmen and observe the rules of the river or the club to which they belong. But if, in spite of a plentiful supply of natural foods, the number of fishermen on a stream increase—unless the

fishing is carefully managed, by those who hold the control of the fishing proposition in their hands—the average number of fish killed by each sportsman will certainly decrease, as will the fish, both in their size and in their condition, as each season progresses.

In order to deal with this problem, a report on the capacity of each stream to provide sufficient food for its fish at different periods of the year and under different climatic conditions might, with advantage, be in the hands of the committee controlling the annual Fly fishing regulations of each club, etc.

The natural food productiveness of each river should be one of the problems to which those who control the fishing should turn their attention, and every danger to the food supply of a river should be examined, and,—if possible,—checked.

PLENTIFUL SUPPLY OF WATER IN TROUT STREAMS

The more water there is in the regular seasonal flow of each river, the more will its surface be extended and the greater will become the extent of its subaqueous area, which area, it must be remembered, embraces the most important food producing factors—the banks on each side of the river. The increase in the flow of a river and the subsequent increase in its surface area may possibly multiply—slightly—the dangers of road and other pollution. But the continual and healthy flow of its water will, on the other hand, probably carry off most of the ill effects of such pollution.

If, on the other hand, the stream be deprived of its natural flow of water at certain seasons of the year, the

chances of pollution increases, and the natural foods will not only be lessened, but the sport of Fly fishing will decline, in a relative proportion to this evil.

The remedy may be found in regulating the flow of the river, where possible, and in the artificial replenishment, by cultivation or otherwise, of the growth of the trees, weeds, bushes and other sources of the natural food supply carried by the river.

WATER INSECT LIFE

Variations in the quantities of any special kind of water insect during certain periods of the year may not directly affect the trout in a river, because, if one or more kinds of these insects fail to appear during one or even two seasons, other families of water insects will frequently be found to increase. Therefore, the falling off of the number of the fish killed cannot always be attributed to loss such as that above mentioned.

Any persistent falling off in the insect life in a river requires however the most careful investigation, as this loss may arise from the introduction of poisonous matter entering these streams and is, therefore, one of the evils that can be prevented.

DANGER OF ROAD POLLUTION

The most common sources of river or stream pollution arise from the chemicals, the sediment, oils and other poisonous matter brought down by road drainage. The great increase of the self-combustion engines of late years, and the oils, etc., which they shed, are largely responsible for the destruction of the insect life of our

streams—the loss of insect life means loss of fish life. It is frequently due to the carelessness or ignorance of those who travel on our roads, that this evil arises.

The fires which are started in our woodland countries frequently owe their origin to the summer tourists. These dangers to our countryside are preventable, and though they are sometimes due to certain members of the fishing fraternity, they are most often due to those who use these roads as touring routes, during the holiday seasons.

THE WORK OF THE PRESS

Our press has, without ceasing, endeavoured to bring these evils to the attention of the public, but, I fear, without meeting that success which should repay them for their trouble in this matter. The evils are due to a minority, and certain severe penalties should be inflicted on any persons whose actions *may possibly* lead to so serious a calamity as a forest fire—even though no actual fire follows their carelessness. A forest fire inflicts untold disaster on the insect, the bird, the animal, and the economic life of the countryside. It is the duty of each of those who enjoy the privileges of the country, to endeavour both by precept, by example and by direct action, to enforce a proper appreciation of the evils which, sooner or later, follow the carelessness, or the thoughtless actions of those who, either through selfishness or through ignorance, disregard the comforts, the safety, and the welfare of the citizens of the countryside.

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COACHING IN Salmon and Trout Fly Casting

BY

FRED. G. SHAW, F. G. S.

(The Amateur Champion, Trout Fly Casting, International Tournament, 1904)

Author of "The Complete Science of Fly Fishing and Spinning, 1915.

Mr. F. G. Shaw, of Prospect Park Court, 147 Ocean Ave., Brooklyn, N. Y., wishes to announce that his school of Fly Casting is open all the year and he is booking clients who are desirous of learning to cast either with the Salmon or with the Trout Fly Rod.

Mr. Shaw guarantees to make his clients both accurate and delicate in Wet or Dry Fly Casting, with the single or double handed rod—in the popular overhead style—in from three to four one-hour lessons respectively. Quite apart from the many thousands whom Mr. Shaw has taught in other parts of the world, he has pleasure in presenting a few of the letters he has received from some of the clients he has coached in America. The accurate casting of a dry fly, so that the line falls in a curve on the water, in order to avoid the drag scaring a fish, etc., has been taught by Mr. Shaw since 1908.

A FEW OF MANY TESTIMONIALS FROM AMERICAN CLIENTS

Mr. J. Howard Reber in a letter written to Messrs. Wm. Mills & Son, of 21 Park Place, N. Y., says under date of May 1st, 1923.

GENTLEMEN:

You recently placed me in communication with Mr. Frederick G. Shaw, since which time I have taken from him three lessons on fly casting. I think it is no more than right that I should advise you that I am more than delighted with the results obtained.

Mr. Shaw, in addition to being an expert fly caster, has developed his system on such a scientific and intellectual basis as to enable him to demonstrate his methods from an intellectual standpoint so that his pupils acquire a definite, scientific knowledge of the methods employed, so as to enable them to carry out accurately his teachings.

I acquired in these three lessons the ability to cast accurately, which indeed, under ordinary circumstances, I should imagine, would require months of practice.

May I thank you for placing me in touch with him.

I will appreciate it if you will mail to me at this address a copy of his work on fly fishing and charge the same to my account.

FROM MAXIMILIAN TOCH, PROFESSOR OF INDUSTRIAL
CHEMISTRY, COOPER UNION

DEAR MR. SHAW:

January 29, 1924.

I was in Belgrade Lakes twice last summer and on the Big Rideau Lakes, in Canada, later in the fall.

Nothing ever gave me such confidence in fly casting as the remarkable instruction I received from you.

It is a great satisfaction to be able to cast accurately and know what you are doing. For many years I probably would have taken first prize in catching either the seat of my trousers or the lobe of my ear, at least once a Season, but now I know exactly what I am doing and with the practice that I have had, I get so much pleasure out of fly casting that I owe you a special vote of thanks.

FROM GIFFORD PINCHOT, GOVERNOR OF PENNSYLVANIA

DEAR MR. SHAW: GOVERNOR'S OFFICE, HARRISBURG *July 7, 1924.*

At the conclusion of your visit to Milford, during which you gave instruction to various members of the Pinchot family from my small boy, who has yet to catch his first trout with dry fly, to my brother and myself, who have been old hands, I want to tell you again how interesting and valuable your visit was.

Since my boyhood I have been using a fly rod, but I never understood, until you gave me your analysis of casting, just what the elements of the problem are, and just how to meet it. In other words, you taught me in two days things about fly casting that I had not gathered for myself in more than forty years of fishing.

You have certainly uncovered the fundamentals as no one else in my experience has done, and unless my own experience is at fault, you can help the man who has been fly fishing all his life almost as much as the tyro who never had a rod in his hand.

With all good wishes and heartiest thanks for your help.

FROM THEODORE ROOSEVELT, ASSISTANT SECRETARY
OF THE NAVY

MY DEAR MR. SHAW: *July 8, 1924.*

All your letters have reached me together on my return from a fishing trip in the west. I didn't realize that you were intending to stay in this country permanently, and take out your papers.

I am enclosing a check for Mrs. Roosevelt's account, and I wish to tell you that I consider it money splendidly invested. She casts excellently. At times, while we were fishing, she got out from thirty-five to forty feet of line, and got it out without difficulty. Indeed, she now casts much better than I do, and I have been fishing these many years.

FROM CHARLES F. A. PHAIR, 174 MAIN STREET, PRESQUE
ISLE, MAINE

DEAR MR. SHAW: *August 15, 1924.*

After careful consideration I consider your principles of fly casting must lead to absolute perfection in throwing a fly, both with the wet and dry fly for salmon or for trout.

Your casting is beautiful and I have profited very considerably by your lessons and I doubt if there be anyone in America who would not be benefited by your tuition. I enjoyed your book on fly fishing very much, it is the only one on the subject I have ever seen that is understandable.

FROM AMOS R. PINCHOT, 101 PARK AVENUE, NEW YORK

DEAR MR. SHAW: *July 15, 1924.*

I want to take this opportunity to express to you my very sincere appreciation of your splendid system of Fly Casting and your patient and effective method of teaching the same. Kindest regards from all of the family.

A FEW OF MANY WORLD-WIDE TESTIMONIALS
FROM SIR JAMES BARRIE, BART.

DEAR MR. SHAW,

Our kind greetings to you.

LONDON,
February 24th, 1912.

If you care to refer anyone to me I shall be delighted to write to them my opinion of your teaching. It is a very high opinion. How do you think . . . did last season? He had never once fished with the fly before your lessons, and the second time thereafter he caught two sea-trout (one 2½ lbs.). Altogether he caught last season over 100 sea-trout and one salmon. If you never knew what a good teacher you are you know it now. He is only eleven. We used to drink your health, and he gave imitations of you (superb).

Yours sincerely,

FROM MAJOR SIR FOSTER CUNLIFFE, BART.

I must write you a short line of thanks for the most excellent lessons you have given me in casting. I finished them with the feeling that for the first time I really know something about the handling of a fly and spinning rod and that I thoroughly understand the principles on which the various casts depend. I never realised before the degree of power and accuracy which was possible with a rod, or that it could be attained so rapidly and by methods so simple. I do not think I can describe in fewer or more laudatory words the peculiar excellence of your system of manipulation and teaching. It seems to me that anyone of reasonable capacity, by grasping and following out your instructions, can get a "regularity of pattern" impossible under any system less thorough; there is between yours and any other teaching that I have ever received the whole difference between what is scientific and what is merely empirical.—F. C., *April 26th, 1913.*

6, DEVONSHIRE ST., PORTLAND PLACE, W.

DEAR MR. SHAW,

May 8th, 1916.

As a fisherman of many years' standing, I can truly say that the practical results of my son's four one-hour lessons were remarkable for a boy of eight years of age. He cast quite a good line, and fished small stretches of the river daily during his short stay in the north. He caught several trout running up to ¾-lb. all by himself. I am sure he has all the foundation necessary to become a good fisherman, and this has been due to the careful and thorough coaching, based on scientific lines, which you gave him. I am much indebted to you for all the trouble you took with him.

Yours sincerely,
D. BARTY KING.

Mr. Shaw has since this date had the pleasure of coaching the two daughters of Dr. Barty King, aged nine and ten respectively.

Mr. Shaw, well-known throughout the world as an instructor in Fly Casting, has coached between 6,000 and 7,000 fishing clients. Both *Accuracy and Delicacy* in casting are guaranteed by Mr. Shaw to his clients, at a fee which is less than the necessary cost of a Fly Rod, reel and line.

For terms and guarantee as to this Accuracy and perfection in casting, apply to—Mr. Fred. G. Shaw, 147 Ocean Ave., Brooklyn, N. Y.

